TECHNOLOGY DEPT:

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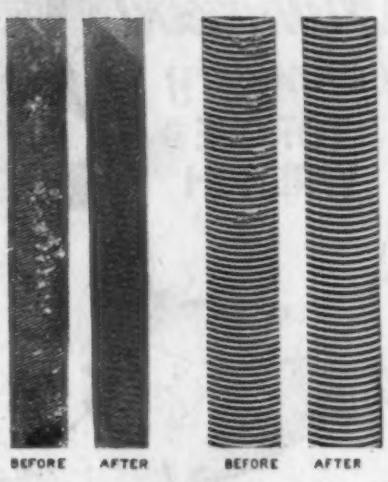
OCT 14 1944

NEW EQUIPMENT DIGEST

EQUIPMENT • IMPROVEMENTS • PROCESSES • MATERIALS • METHODS • APPLICATIONS • LITERATURE

Vol. 9 | October, 1944 | No. 10

FILE RECLAIMING



Old, worn files which would normally be discarded are claimed to be restored to usable condition by low cost method which does not affect original temper. All teeth or cutting edges are sharpened, burrs are removed and reclaimed files are anti-rust treated and inspected. Cutting life of reclaimed files is claimed to be 80 to 90 per cent of that of new files and cutting edges are equally sharp and efficient.

Files may be restored as many as three times by this method. Average cost of resharpening is about 12 cents, depending upon size and quantity ordered. Process applied by Sav-A-Tool Corp., 3567 Eastern Ave., Cincinnati 26, O.

▲ Mention Item NED-5665 when writing ▲

FREIGHT CAR DOOR OPENER

Even the most balky, binding freight car doors are opened easily by one man with this Monarch car door opener. Operating on short, powerful leverage principle, device assures

complete safety to user. One end of chain is hooked to car ladder rung and opener hook is slipped over car door handle. Door is moved by pulling outward on center of chain stretched between above two points, while slack is taken up with left hand. Puller is readily carried and list price is $17.50. Made by The Mining Safety Device Co., Bowerstown, O.

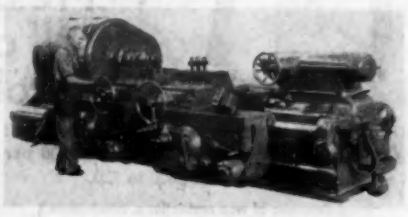
▲ Mention Item NED-5666 when writing ▲

DESCALING NOZZLES

Easily attachable to any standard welding torch butt, flame priming and descaling nozzles are made in 4 and 8-inch models. Device is provided with spiral mixer and gas proportioner to handle large volumes of gas required in these operations efficiently. Mixing device is virtually free from backfire or flashback. Airadiator aluminum cooling section in nozzle head keeps premixed gases below ignition temperatures. Replaceable Meehanite skid shoes add substantially to wearing life of nozzle and permit it to be dragged at any suitable angle over surfaces to be cleaned. Made by Victor Equipment Co., 846 Folsom St., San Francisco 7, Calif.

▲ Mention Item NED-5667 when writing ▲

LARGE SHELL LATHE



Powered by 75-horsepower motor, this heavy duty lathe is tooled for rough turning operations in production of 14 and 16-inch high explosive shell. Alloy steel gears are used throughout and anti-friction bearings are employed on all rapid turning shafts. Work is driven by hydraulic expanding mandrel and on dead center in tail stock. Two heavy duty carriages and aprons have independent automatic feeds with power rapid traverse. One carriage is fitted with cam arrangement for feeding tool along curved line to form nose of shell. All controls are conveniently located for operator. Made by Wickes Bros., 515 N. Washington Ave., Saginaw, Mich.

▲ Mention Item NED-5668 when writing ▲

SYNTHETIC RUBBER CEMENT

Available for immediate shipment without priorities or restrictions, synthetic rubber cement is adaptable for mounting papers, drawings, photographs or tissues. This transparent cement is made of noncritical materials. It will not smear ink nor curl or wrinkle even flimsiest tissues. It sticks tightly, lays flat and is clean. Any excess can be removed with fingers. Cement is furnished in variety of sizes from desk bottles to gallon cans. Made by The Craftint Mfg. Co., 210 St. Clair Ave., N. W. Cleveland 13, O.

▲ Mention Item NED-5669 when writing ▲

LIGHTED SWITCH PLATE

Employing tiny shielded light which is turned on automatically when room lights are turned out and remains off whenever room lights are burning, LumiNite wall switch plates make switch easy to locate in the dark, serve as safety or pilot lights and keep walls free of smudges or fingerprints caused by groping for switch. By indicating whenever remotely located lights are on, it saves electricity.

Plate is molded in ivory plastic and includes housing for fractional wattage glow lamp and mechanism. Soft glow of light is emitted which affords safety and convenience in finding one's way around at night. Current used costs less than 2 cents per year. It fits any standard switch and is particularly useful on three and four-way switch arrangements. Made by Associated Products Co., 74 E. Long St., Columbus 15, O.

▲ Mention Item NED-5670 when writing ▲

Do You Know

■ BOMBS weighing up to 1000 pounds are fitted with two wheel-like laminated paper bands to facilitate handling and transportation and to protect metal lugs of bomb casing against damage. This application is claimed to save 200 million pounds of steel annually. Fiber bands offer substantial improvement in ability to withstand shock and abuse over formerly used steel bands. Developed by Alton Box Board Co., Alton, Ill. and Kenray Co., Milwaukee, Wis.

▲ Mention Item NED-5671 when writing ▲

Free consultation service for west coast manufacturers planning to convert in postwar era to production of consumer items is offered in weekly conference. Aid is offered to war plant operators by panel of merchandising authorities. Plan inaugurated by Los Angeles Chamber of Commerce, Los Angeles, Calif.

▲ Mention Item NED-5672 when writing ▲

Electric motors sealed with Pliobond organic cement will perform all normal tasks while immersed in gasoline or other fluids. Sealed motors are already in use in aircraft fuel tanks and elsewhere. Pliobond made by Goodyear Tire & Rubber Co., 1144 E. Market St., Akron, O.

▲ Mention Item NED-5673 when writing ▲

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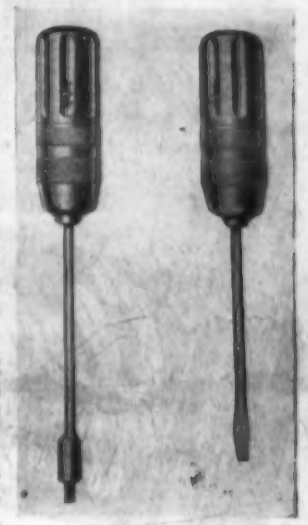
Read Carefully
CHECK AND PASS ON

CHECK	NAME AND TITLE	SEE ITEM NO.

TORQUE SCREWDRIVER



Danger of over or under tightening, thread stripping or material damage is eliminated through use of this Livermont Roto-Torq screw and bolt driver. Torque may be adjusted to any amount between 1 and 25 inch pounds for setting small screws, nuts and bolts. Because tool disengages at proper torque, it is impossible for operator to tighten beyond preset amount.

Mechanism operates on spring principle. Torque tolerances are close and are not affected by excessive oil or foreign matter. Screwdriver and ¼-inch square shank models are available. Adjustments may be made on handle by easily read calibrated vernier arrangement. Made by Richmont, Inc., 215 W. Seventh St., Los Angeles, Calif.

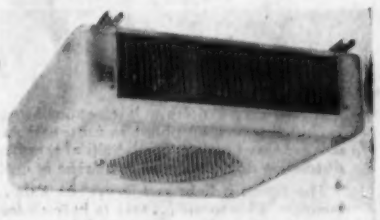
▲ Mention Item NED-5674 when writing ▲

PRECISION MICROMETERS

Ranging in size from 1 to 6 inches, this line of Certified Accuracy micrometers features drop forged alloy steel frames finished in noncorrosive baked black enamel. Polished frame types are available in 1 and 2-inch models. These tools can be furnished with ratchet stop, lock nuts and graduations to 0.0001 inch, as well as full range of metric micrometers. Illustration shows plush-lined leather cased set of six micrometers for range from 0 to 6 inches. Made by Central Tool Co., Dept. C Auburn, R. I.

▲ Mention Item NED-5675 when writing ▲

UNIT COOLERS



Fulfilling need for easily cleaned, attractive ceiling type horizontal coolers for cold rooms and large refrigerators, Spasaver air coolers, housed in white enamel cabinets, are suitable for all common refrigerants and are ready for installation. Ten sizes are available for use in restaurants, food processing plants, chemical industries and other locations where sanitation is important.

Units are equipped with propeller type fans which operate quietly. Coils are of fin and tube type and have kinetic type refrigerant distributor. Slow speed, totally enclosed, ball bearing motors which operate on 115-volt, 60-cycle alternating current are permanently lubricated. Made by Drayer & Hanson, Inc., 738 E. Pico St., Los Angeles 21, Calif.

▲ Mention Item NED-5676 when writing ▲

with PLASTIC ROCK!

Trowel a smooth, tough, plastic surfacing right over your old concrete or wood floor.

Plastic Rock comes complete, packed in barrels. Nothing more to buy. No application "formula" to confuse you. Simply mix and trowel right over old floor. Average depth one-half inch. Old floor Saturday is a new floor Monday. Also patches concrete to a perfect feather edge. Plastic Rock is absolutely spark-proof, skid-safe wet or dry, dustless, silent. Feels like cork under foot. Cannot splinter, crack, crumble, curl or loosen. Heavy loads on steel wheels actually improve it. Five-year old floors show no wear. Rich, dark neutral gray. Used by U. S. Army, Navy and largest industries in America. Your contractor or your own crew can apply.

Ask for your copy of Report 220-10

UNITED LABORATORIES, INC.
16608 EUCLID AVENUE · CLEVELAND 12, OHIO
In Canada—STORRAR MFG. COMPANY, Weston, Ontario

▲ Mention Item NED-5677 when writing ▲

Illustrated are 3 popular tools in the fast-working, air-saving Cleco line. Every tool backed by 50 years' experience in this field. *Ask for bulletins* on these tools and also our rotary drills and grinders, squeezers, aircraft riveters, sheet holders, and accessories.

THE CLEVELAND PNEUMATIC TOOL CO.
3781 East 77th Street ★ CLEVELAND 5, OHIO
BRANCH OFFICES IN ALL PRINCIPAL CITIES

▲ Mention Item NED-5676 when writing ▲

Even where NOISE IS LOUDEST

You can hear in a BURGESS ACOUSTI-BOOTH

Now available . . . Subject to prior sale

If your shop is noisy . . . if telephone instructions are difficult to hear . . . install your shop phone in a Burgess Acousti-Booth. It is quiet inside for easy hearing. Thick walls of sound absorbent material soak up distracting noises . . . provide a "zone of quiet."

The booth is light and airy . . . no door . . . no mechanical parts to maintain. Easy to use . . . easy to keep clean. Prevailing Acousti-Booth stocks are limited . . . so . . . send for your free illustrated booklet today.

Mail Coupon for Free Booklet Today!

Burgess-Manning Company
2817-C W. Roscoe St.
Chicago 18, Illinois
Please send illustrated booklet describing the Burgess Acousti-Booth.

NAME _____
FIRM NAME _____
STREET-CITY _____

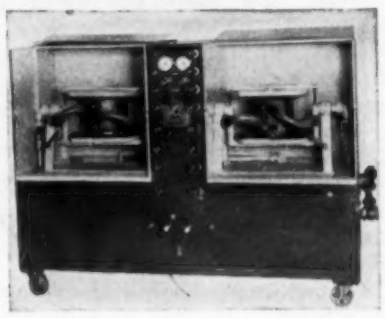
▲ Mention Item NED-5679 when writing ▲

PORTABLE GREASE GUN

Delivering fast, positive high pressure lubrication with all types of lubricants which will seek their own level, model 7190 electric power grease gun is fully portable. It is equipped with large heavy duty wheels for mobility and handling is facilitated by ball bearing front caster in steering mechanism. Power is furnished to high pressure grease piston and cylinder by 1/3 horsepower 110-volt motor. Mercury switch shuts off motor automatically when pressure of 5000 pounds per square inch is built up in delivery hose. Gun has accessible check valve and pressure release valve. Equipment includes 12-foot electric cord, 6 feet of ¼-inch hose which has 20,000-pound burst pressure, control valve with hydraulic coupling, combination handle, cord and hose rack. Made by **Alemite Div., Stewart-Warner Corp., 1800 Diversey Pkwy., Chicago, Ill.**

▲ Mention Item NED-5680 when writing ▲

METAL PARTS WASHER



Cleaning of aircraft oil temperature regulators is performed effectively with Turco Surj automatic washer. Machine cleans with such completeness that it provides means for quick visual analysis of engine wear through examination of matter evacuated from regulator which is caught in removable fine wire screen basket.

Seven different cleaning operations are performed in sequence by turning clearly identified valves positioned in panel on front of washer. As various solutions are put through it, regulator is revolved by cradle with abrupt changes of speed which set up positive surging action. There are two individually controlled cleaning compartments. Several regulators can be cleaned on one side while particularly dirty ones requiring prolonged cleaning can be handled on other cradle. Metal cabinet measuring 8 feet long, 3 feet deep and 62 inches high houses entire unit. Cradles, temperature and pressure indicators and valve controls are within full view of operator. Made by **Turco Products, Inc.**, Dept. 25, 6135 S. Central Ave., Los Angeles 1, Calif.

▲ Mention Item NED-5681 when writing ▲

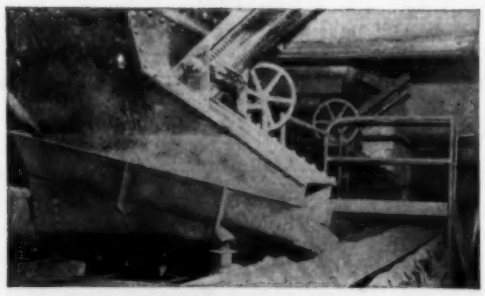
DO YOU KNOW?

"Marbleizing" of metal is latest contribution to postwar products from Goodyear Research Laboratories. Metal is covered with layer of plastic which is finished and colored to resemble rare and beautiful marble. Development is made possible through use of Pliobond which is easy to apply, has high adhesion, is waterproof and provides flexible bond which withstands wide temperature changes. Made by Goodyear Tire & Rubber Co., 1144 E. Market St., Akron, O.

▲ Mention Item NED-5682 when writing ▲

Solids Flow with SYNTRON

"Electronic-Controlled Vibration"



"Vibra-Flow"

VIBRATING FEEDERS

Provide Rheostat-Control of Material Flow
Capacities from OUNCES to 500 TONS per hour.
NO MOTORS—GEARS—NOR OTHER MECHANICAL WEARING PARTS
Write us about your problem.

SYNTRON COMPANY
405 Lexington Ave. Homer City, Pa.

▲ Mention Item NED-5683 when writing ▲

Now ACCURATE REFLEX TORQUING *faster than thought . . .* WITH THIS NEW WRENCH

accurate torquing becomes fast and automatic. When the exact "set" torque is reached, the SENSORY Mechanism sends three simultaneous nerve impulses to the operator's muscular control center, instantly releasing the tension by reflex action. Recorded through three channels—*sight, sound* and *feeling* — all three at once—or by any one of them individually, *automatic reflex torquing* is obtainable under every working condition, in spite of lack of visibility, factory din, physical handicaps (deaf, blind or maimed), or degree of inattentiveness.

This new Sensory feature is built into standard STURTEVANT *Permanently Accurate* Torque Wrenches — the indestructible torque measuring wrench universally used for production, inspection and wherever torque must be accurately gauged. Controlled by reflex-action it speeds up production while maintaining accuracy of torquing far beyond that possible with any other fast-operating production wrench.

On a field test in large engine builders production line first test wrench still dead accurate after 379,447 deflections—no repairs, no re-settings, no adjustments *and still operating.*

Write for Bulletin SW22

BUY MORE WAR BONDS

P. A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

▲ Mention Item NED-5684 when writing ▲

Now—for the first time—standardized air gage spindles and components for checking long, short, through or blind holes at the gage or remotely at the machine or bench. You can *write your own specs!*

No more engineering time and charges! Deliveries shortened to a matter of days. Interchangeability of spindles and components enables adoption of complete air gaging program at minimum cost and minimum gage inventory

No more GO and NO GO checking of internal diameters. Both tolerance limits are checked in one pass faster than either could be checked with a plug gage. Precisionaire spindles outlast plug gages 10 to 40 times.

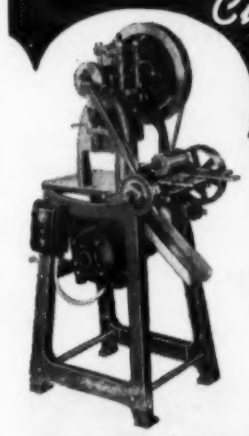
Parts with tolerances ranging from .005" to fractions of .0001" can be checked quickly by unskilled and untrained operators who merely present the gage to the part or vice versa.

Write for Engineering Data No. 12 on Sheffield STANDARDIZED Precisionaire Components and SPECIAL applications.

THE SHEFFIELD CORPORATION
Dayton 1, Ohio, U.S.A.
MACHINE TOOLS · GAGES · MEASURING INSTRUMENTS · CONTRACT SERVICES

▲ Mention Item NED-5685 when writing ▲

DIEBEL Hi-Speed 550 RPM STAMPING PRESS
Cuts Production Time



FROM 800 hours TO 35 hours ON SINGLE WAR-TIME ORDER

Press Pays for Itself on just ONE job!

Stamping production of small aircraft part is boosted from 400 per hour to 12,000 per hour — costs cut from $800 to $30.

(Because of war restrictions, illustration or description of part is prohibited.)

The Diebel Hi-Speed Press is the ideal machine for all small punch work. It saves power, labor, space, money.

WRITE FOR BULLETIN

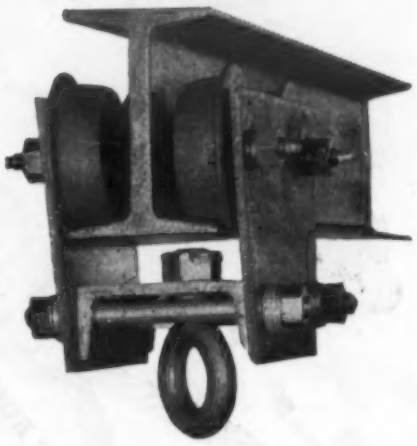
SEND SAMPLES OR BLUE PRINTS — QUICK DELIVERY

DI MACHINE CORP.
DIVISION OF DIEBEL DIE & MFG. CO.
3652 N. LINCOLN AVE. CHICAGO

▲ Mention Item NED-5686 when writing ▲

GRAY TROLLEYS

For Any Size I-Beam



GRAY TROLLEYS are designed to meet the demand of industry for a trolley with closest possible headroom. They safely and efficiently raise loads, are easily transferable through the shop, and are equipped with New Type, Thoroughly Sealed, Gray Ball Bearing Trolley Wheels.

Long, trouble-free service is what you get with every GRAY TROLLEY and that's an important consideration today. Made in 250-lb. to 2 ton standard capacity sizes adjustable to suit various I-Beams. We would like you to have our bulletin which describes and illustrates in detail our TROLLEYS and our TROLLEY WHEELS. Send or it now!

GRAY HUB COMPANY
Incorporated 1922
17265-17403 GABLE AVENUE DETROIT 12, MICHIGAN

▲ Mention Item NED-5687 when writing ▲

for fast .... low cost material handling

use the "Buda Chore Boy!"

This modern, powerful, speedy truck will quickly pay for itself in saved manhours—time and operating expense.

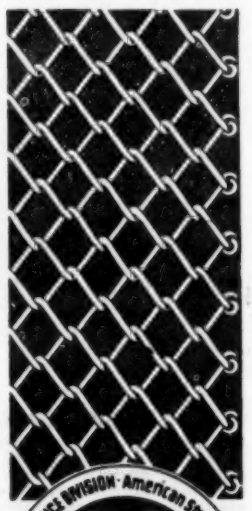
Inexperienced operators efficiently handle heavy loads around plants—docks—railroad yards and shops etc. with ease and safety. No batteries to re-charge. *Write today for bulletin.*

THE BUDA COMPANY
15419 Commercial Ave., Harvey, Chicago Suburb, Illinois

▲ Mention Item NED-5688 when writing ▲

SAVE MONEY

with CYCLONE Conveyor Belts

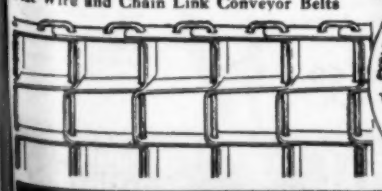


EXPERIENCE has proved that in the long run you save money with Cyclone Metal Conveyor Belts. That's because they speed production, cut breakdowns, save labor. They stand up under water, steam and changes in temperature far longer than belts of other materials. Flexible—but strong. Porous—easier to keep clean.

Made in many widths, weights and sizes of openings—Chain Link and Flat Wire types. Write us for detailed information and prices. No obligation.

CYCLONE FENCE DIVISION
(AMERICAN STEEL & WIRE COMPANY)
Waukegan, Ill. *Branches in Principal Cities*
United States Steel Export Co., New York

Flat Wire and Chain Link Conveyor Belts

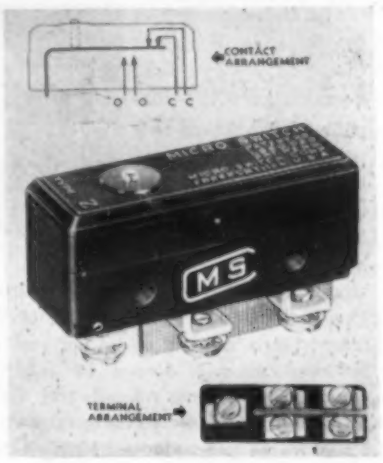


USS CYCLONE "Red Tag" METAL BELTS — CYCLONE FENCE DIVISION · American Steel & Wire Co. — UNITED STATES STEEL

UNITED STATES STEEL

▲ Mention Item NED-5689 when writing ▲

SPLIT CONTACT SWITCHES



Offered as means for simplifying complex electrical circuits, split contact Micro Switches have two sets of contacts which are mechanically interlinked but electrically isolated. Transfer action is matter of a few milliseconds. Unit may be used for transferring operation of equipment from direct to alternating current or vice-versa. It is possible to control four isolated circuits by pairs, eliminating use of relays or other isolating means. Double-throw switches have two contacts on both normally open and normally closed side as shown. Several plunger styles are available. Made by **Micro Switch Div.**, 205 S. Chicago Ave., Freeport, Ill.

▲ Mention Item NED-5690 when writing ▲

INFRA-RED DRYING UNITS

Portable model P-7-IR infra-red drying unit is adaptable for wide range of baking, drying, dehydrating and pre-heating operations. Cross arm is fully adjustable on upright and reflector yoke may be adjusted so that radiant energy is directed from practically any angle at heights ranging from 18 inches to 6 feet from floor. Unit employs seven 250-watt infra-red lamps of either tungsten or carbon filament type. Reflectors are easily cleaned.

This model is claimed to be advantageous for drying out electrical equipment, drying off material after degreasing, baking of insulation or electric motor parts, baking of finishes or wide variety of products, pre-heating material prior to assembly and pre-heating thermoplastic materials to facilitate shearing, punching or molding. It may also be used for experimental machinery and dehydration operations. Made by **Fostoria Pressed Steel Corp.**, 1240 Harris Rd., Fostoria, Ohio.

▲ Mention Item NED-5691 when writing ▲

DO YOU KNOW?

Methods for reclaiming gages and tools such as saws, drills, milling cutters, taps and reamers are outlined in technical article prepared by F. L. Woodcock, chief engineer of Hamilton Standard Propeller Div., United Aircraft Co. Process uses low temperature silver brazing alloys to repair broken tools. Copies of paper available from Handy & Harman, 82 Fulton St., New York 7, N. Y.

▲ Mention Item NED-5692 when writing ▲

BARRIER SKIN PROTECTION AGAINST INDUSTRIAL IRRITANTS

FEND-U

AN IMPORTANT ADDITION TO THE COMPLETE M·S·A FEND GROUP OF SKIN-PROTECTING CREAMS AND LOTIONS

A semi-water repelling lotion, FEND-U forms a barrier on the worker's skin against all types of cutting oils and cooling compounds, kerosene, carbon tetrachloride, tetrachlorethylene, mild acid and mild alkaline solutions, alcohols, acetates. Write for descriptive literature on this new addition to the Fend group.

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS AND MEADE STREETS
PITTSBURGH, PENNSYLVANIA

▲ Mention Item NED-5693 when writing ▲

INSTANT HEAT!

IDEAL Electric SOLDERING TOOLS

Not just ordinary soldering irons, but specially designed soldering tools to do every kind of soldering job. Melt new, high melting point solder—quickly. Available in a wide variety of models.

Immediately Available

Heat the *work*, not just the soldering tool.

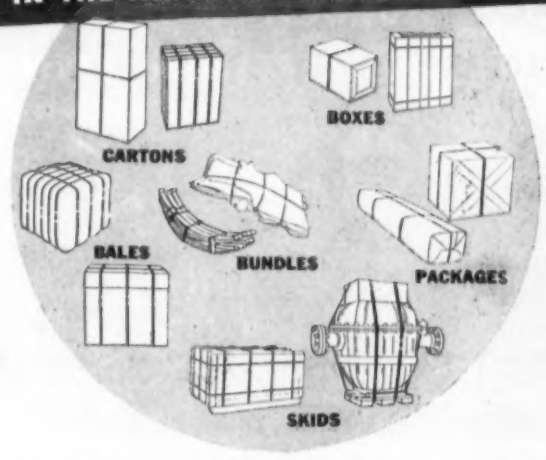
Write for Detailed Literature

IDEAL Sycamore

IDEAL COMMUTATOR DRESSER CO.
1032 Park Ave. Sycamore, Ill.
Sales Offices in all Principal Cities
In Canada: Irving Smith, Ltd., Montreal, Quebec

▲ Mention Item NED-5694 when writing ▲

IN THE MIDST OF GLOBAL WAR...



Many shipping problems must be answered

Now—when the "big push" is on, the Signode System is strapping all kinds of shipments for fast dispatch to many war fronts.

At your call are Signode's wartime and pre-war experience. This has been gained in engineering the packing and carload bracing of all types of products and the careful testing of packing and stowing methods developed in the Signode Laboratory. Your nearby Signode representative is ready to serve you.

34 Branches throughout the Nation

SIGNODE STEEL STRAPPING CO.
2632 N. Western Ave., Chicago 47, Illinois
Brooklyn, N. Y.: 378 Furman St. • San Francisco, Calif.: 467 Bryant St.

▲ Mention Item NED-5695 when writing ▲

OHMITE compact generator field rheostats are tapered or uniformly wound for separately or self excited generators. Continuous variation of resistance in even the smallest sizes — saves control-panel space! Ten wattage sizes from 25 to 1000 watts, in single or tandem units — suitable for every size generator. ★ *Write on company letterhead for helpful 96-page Catalog and Engineering Manual No. 40.*

OHMITE MANUFACTURING CO.
4841 FLOURNOY ST. • CHICAGO 44, U.S.A.

Be Right with OHMITE
RHEOSTATS • RESISTORS • TAP SWITCHES

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RYERSON STEEL IN STOCK

Call Ryerson when you need steel — any kind, shape, or size. Large stocks are available at ten convenient plants. Ask for a Ryerson Stock List — your guide to prompt shipment of steel.

Principal Products Include:

Bars • Shapes • Structurals • Plates • Sheets • Floor Plates • Alloy Steels • Stainless Steel • Shafting • Screw Stock • Wire • Mechanical Tubing • Boiler Tubes • Reinforcing Steels • Tool Steels • Babbitt • Nuts • Bolts • Rivets • Welding Rod • Etc.

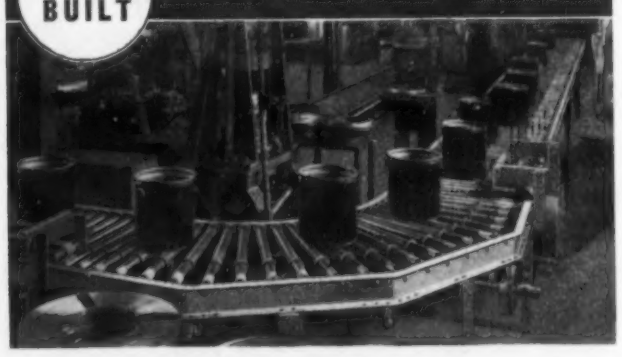
JOSEPH T. RYERSON & SON, Inc.

Plants at:
CHICAGO, MILWAUKEE, ST. LOUIS, CINCINNATI, DETROIT, CLEVELAND, BUFFALO, BOSTON, PHILADELPHIA, JERSEY CITY.

▲ Mention Item NED-5697 when writing ▲

LIVE ROLLER CONVEYORS

LOGAN BUILT BRING POSITIVE SAVINGS



INDUSTRIAL plants throughout America are finding new efficiency and economy in handling materials, parts and products with Logan Live-Roller conveyors. The rollers are actuated by a continuous belt contacting the underside. These conveyors are always dependable for light or heavy duty, speed handling and reduce costs.

Whatever your handling problems, you should know about the many types of Logan conveyor equipment. Write today for informative literature. Logan Company, 215 Cabel, Louisville 6, Kentucky.

Logan Conveyors

PUT *FLOW* INTO PRODUCTION

▲ Mention Item NED-5698 when writing ▲

SAVE on FALL heating with these ELECTRIC unit heaters

SAVE MONEY—Chromalox electric unit heaters work *only when needed*. No steam boiler operation, no manpower expense.

SAVE TIME—They give you *instant* heat, and at *any time* —working days, holidays, overtime, Sundays.

SAVE HEALTH—They circulate stimulating, warmed air —where you want it. Prevent colds, sickness, absence. No flame-vitiated air.

SAVE INSTALLATION COSTS—Wired power will go anywhere—easily, inexpensively.

SAVE TROUBLE—no piping problems, leaks, condensate troubles,—and no flame hazard.

The Type HF unit heater, in four sizes—1.5 to 4-kw. Other types up to 40-kw., for heating large areas. Chromalox unit heaters can be supplied with thermostatic control if desired. Available on proper priority.

CHECK NOW ON CHROMALOX ELECTRIC UNIT HEATERS

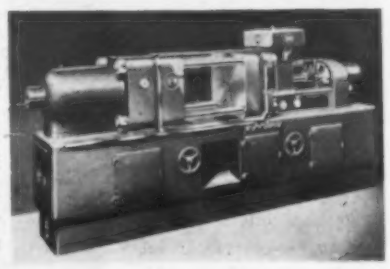
Tell us your conditions—let us submit an estimate on costs, and recommend equipment.

Write for Chromalox Catalog

EDWIN L. WIEGAND COMPANY
7509 Thomas Blvd. Pittsburgh 8, Pa.

▲ Mention Item NED-5699 when writing ▲

PLASTICS MOLDING MACHINE



Having capacity of up to 16 ounces per piece, this hydraulic injection molding machine is designed for producing parts of thermoplastic materials. Granules of raw materials are loaded into hopper on top of machine and are measured as required into heating chamber. Plastic is heated in chamber under thermostatically controlled temperature until it is of proper consistency for molding. Softened mass is forced by horizontally actuated plunger through orifice into closed and tightly locked mold. Mold opens automatically, piece is ejected, mold closes and plunger again forces proper amount of plastic mass into mold. Cycle is thus repeated rapidly.

Materials customarily injection molded include cellulose plastics such as Lumarith, Plastacele, Tenite I and Fibestos; cellulose acetate-butyrate or Tenite II; polystyrenes such as Styron, Loalin and Lustron; acrylics such as Plexiglas and Lucite; Vinylite or polyvinyl chloride and Saran or vinylidene chloride.

Material injected per cycle is adjustable up to 16 ounces. Plasticizing capacity is 100 pounds per hour and hopper holds up to 100 pounds of granules. Molding space measures 20 x 30 inches with maximum mold thickness of 12 inches. Heat is supplied by 6½-kilowatt heaters and 30-horsepower motor drives machine. Injection pressure is 20,000 pounds per square inch. Made by **Hydraulic Press Mfg. Co.**, 100 Marion Rd., Mount Gilead, O.

▲ Mention Item NED-5700 when writing ▲

HEAT OXIDATION PROTECTION

Three processes which are applied to iron and steel to prevent corrosion at high temperatures are known as Metcolizing and are claimed to increase service life of heat treating equipment from 200 to 800 per cent. Processes are easily applied and lend themselves to shop production methods.

Process 11 shields against corrosive action of gases at temperatures up to 1600 degrees Fahr. Surfaces are grit blasted and then metallized with aluminum. Sealer coat is applied and article is heat treated. Aluminum is absorbed into metal and later oxidizes on outer surface. Iron or steel thus treated withstands action of sulphur gases.

In temperature range of 1600 to 1800 degrees Fahr., process 33 protects against action of corrosive gases. Grit blasting is followed by spray coating of chromium-nickel alloy after which sealer of metallic aluminum is painted on. Alloying of metals occurs during use and no initial heat treatment is required. This coating will not withstand corrosive action of [illegible] gases.

Maximum protection up to 1800 degrees Fahr. and higher is afforded by process 45. After grit blasting, thicker coating of chromium-nickel is sprayed on, followed by sprayed coating of aluminum. Sealer [illegible] then applied and first heat in use causes alloying. Though somewhat porous, this coating is impervious to action of sulphur and other gases.

Typical parts which are made resistant to heat oxidation by these methods are structural furnace parts, burner caps, pyrometer tubes and brackets, annealing trays, carburizing boxes, magnesium superheaters, aluminum melting pots and aircraft exhaust manifolds. Processes developed by **Metallizing Engineering Co.**, 38-14 Thirtieth St., Long Island City 1, N. Y.

▲ Mention Item NED-5701 when writing ▲

NEW SPEEDAIRE Fan-Cooled Unit by Cleveland

More horsepower per dollar! With the new Cleveland Speedaire Worm Gear Unit it is possible to obtain an operating capacity equal to that of a standard worm gear unit having approximately double the frame size.

Speedaire—the *new* Fan-Cooled Unit—continually removes heat by means of a high-velocity air stream scouring the outer surfaces of the oil reservoir, giving it a greatly-increased capacity over a standard worm gear unit. The Cleveland Worm & Gear Company, 3283 East 80th Street, Cleveland 4, Ohio.

Affiliate: The Farval Corporation, Centralized Systems of Lubrication
In Canada: PEACOCK BROTHERS LIMITED

Cleveland **SPEEDAIRE** FAN COOLED *Worm Gear Reduction Units*

▲ Mention Item NED-5702 when writing ▲

SAFE-LINE
WIRE ROPE CLAMPS

Write for details of this—the only PERFECTED wire rope clamp on the market. Millions used by Manufacturers, the Armed Forces and Industries.

NATIONAL PRODUCTION COMPANY
4557 ST. JEAN AVENUE DETROIT 13, MICHIGAN

▲ Mention Item NED-5703 when writing ▲

Time studies reveal that when mechanics must fight dirt and grease on machinery, tools and equipment, production speed is slowed 25% to 40%. Periodic JENNY Steam-Spray cleaning not only saves these precious man-hours, but often prevents costly shutdowns by revealing defects in machinery in time to permit repairs before failures occur. JENNY cleans floors, runways, windows, walls, skylights, 8 to 10 times faster than by hand-cleaning methods.

Hundreds of manufacturing plants have adopted JENNY as the quickest, most efficient method for all their cleaning jobs. Let us show you how to increase your plant production by getting rid of speed-retarding dirt and grease the JENNY Steam-Spray Way.

Hypressure Jenny Division of

HOMESTEAD VALVE MFG. CO.
P. O. BOX 84 • • • • CORAOPOLIS • • • PENNSYLVANIA

▲ Mention Item NED-5704 when writing ▲

HEXACON
is helping to do the job at Westinghouse

TYPE P-200 for quick, ample heat and long life...

One of the major suppliers to the Armed Forces in wartime, and to civilian requirements in peacetime, Westinghouse has consistently specified HEXACON soldering irons

"BALANCED HEAT"

Incorporating the exclusive HEXACON principle of design, excessive element-impairing heat is dissipated by the patented hexagon-shaped barrel. Danger through over-heating is minimized, and efficiency and economy of operation are increased.

WRITE FOR LITERATURE
The HEXACON line is one of the most complete available today; included are a diversity of types and sizes. All are described in fully illustrated literature; write today, no obligation.

HEXACON ELECTRIC CO.
145 W. Clay Ave., Roselle Park, N. J.

HEXACON HIGH-QUALITY LONG-LASTING SOLDERING IRONS

▲ Mention Item NED-5705 when writing ▲

This is not a worker earning fabulous sums but an ordinary guy named "JOE" . . . .

. . . . on the job every day, producing critically needed Thermometers so that GI-Joe can do his job and return home soon.

To prevent costly breakdowns, after this war, it is your duty to give serious thought NOW to equipping your plant with GOOD Thermometers.

And Palmer Thermometers give you:

1. . Precision and Guaranteed Accuracy
2. . Sturdiness and long life
3. . A bright RED column . . . so easy to see with "Red-Reading-Mercury".

Clip this ad as a reminder. *(Catalog on request.)*

THE PALMER CO. Mfrs.

Industrial, Laboratory, Dial & Recording Thermometers

2523 Norwood Ave., Cincinnati, Norwood 12, O.

Canadian Plant: King & George Sts., Toronto

▲ Mention Item NED-5706 when writing ▲

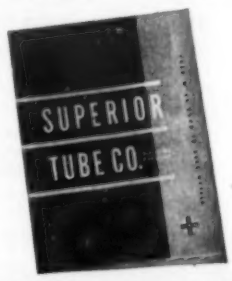
WELDRAWN

THE SUPERIOR WELDED (AND DRAWN) METAL TUBING FROM 5/8" OD DOWN

WELDRAWN is the trademarked Superior Tube Company welded tubing which combines practically all of the physical and metallurgical qualities of seamless . . . smooth bright finish, homogenous structure, close tolerances, high tensile strength — with economy. WELDRAWN has a firm preferred place in industry . . . the result of wide usage and highly satisfactory performance.

Produced in Stainless Steels (various analyses), and "Monel."

Write today for Bulletin No. 48.



SUPERIOR TUBE COMPANY

NORRISTOWN, PENNSYLVANIA

"FOR FINE SMALL TUBING"

▲ Mention Item NED-5707 when writing ▲

SHARP, TOUGH, SPEEDY

POLISHING GRAINS BY CARBORUNDUM

You can be sure of a better polishing job because these grains are *sharp!* They last longer, too, because they're *tough*—and they hold, while they cut, while they polish. For these reasons they increase production and better the finish. You'll get better work and lower costs if you order Polishing Grains by Carborundum. The Carborundum Company, Niagara Falls, N. Y.

Complete stocks in all sizes of Carborundum Brand Silicon Carbide and Aloxite Brand Aluminum Oxide now available.

Abrasive Products by **CARBORUNDUM**

Sales Offices and Warehouses in New York, Chicago, Philadelphia, Detroit, Cleveland, Boston, Buffalo, Pittsburgh, Cincinnati, St. Louis, Grand Rapids

(Carborundum and Aloxite are registered trade marks of and indicate manufacture by The Carborundum Company)

▲ Mention Item NED-5708 when writing ▲

DRILL PRESS TURRET

Fitted to any Atlas, Buffalo, Delta, Walker-Turner or other similar small drill press, this MADCO turret head adapts machine for multiple spindle operations. Model shown carries six individual spindles and will take up to ⅜-inch drills. Tapping may be performed when drill press is reversible.

Unit is attached to drill press quill by means of collar and locked in place by three set screws. Chuck is removed and replaced with driving mechanism supplied with attachment. Individual spindles are driven through clutch arrangement and are in perfect alignment when in working position. Detent arrangement indicates proper indexing of head and only vertical spindle is driven.

Head may be furnished with six screw chucks, blank for drilling to user's specifications; six adapters for No. 1 Jacob chucks or any combination of both. Optional equipment includes adapters for No. 2 or 3 Jacob chucks, automatic indexing depth stop and adapter collar for 17-inch Delta drill press. Made by **Machine Development Co.**, 516 Fifth Ave., New York 18, N. Y.

▲ Mention Item NED-5709 when writing ▲

BLACK COATING FOR COPPER

Preparation of copper alloys such as copper brass and bronze for painting, lacquering and enameling to assure good adhesion is possible with Ebonol "C" process. This method produces stable, adherent non-reactive cupric oxide coating on copper alloys to provide high adhesion of lacquers, paints and enamels under severe weathering conditions. Finish is nap-like in texture and presents relatively absorbent base to which paint anchors. Finish is applied by simple immersion for 10 minutes in dilute solution of salts operated near 210 degrees Fahr. Developed by **Enthone Co.**, 478 Elm St., New Haven, Conn.

▲ Mention Item NED-5710 when writing ▲

FLUORESCENT FIXTURES

Provided with accessories for every method of mounting or hanging individually or in continuous rows, line of Mitchelite All-Steel industrial fluorescent fixtures includes two lamp 40-watt, three lamp 40-watt and two lamp 100-watt models with choice of open or closed end reflectors in baked enamel or porcelain enamel finish. Instant-Start feature is available on two lamp 40-watt models.

All units are Underwriters' Laboratories and E.T.L. approved. Power factor is over 90 per cent. Units are stroboscopic corrected, operating on 110-125-volt 60-cycle alternating current. They are also available in higher voltages. Made by **Mitchell Mfg. Co.**, Dept. N-2, 2525 N. Clybourn Ave., Chicago 14, Ill.

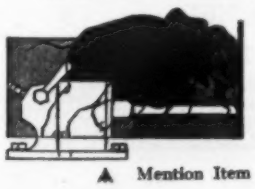
▲ Mention Item NED-5711 when writing ▲

Announcing **MEAD**

MIDGET AIR CLAMPS

Horizontal and Vertical!

Both models deliver 80 lbs. pressure on a line pressure of 100 lbs. They'll save countless man-hours in assembly operations involving welding, riveting, bolting, etc. *Advantages over mechanical clamps:* 1. Any number can be operated by single master valve. 2. Easily installed in cramped corners. 3. Equal ram pressure at any stroke point. Send for new Mead AIR POWER Catalog, describing our line of Air Clamps, Air Vises, Air Presses, Work Feeders, Valves, Controls, etc.



MEAD SPECIALTIES COMPANY

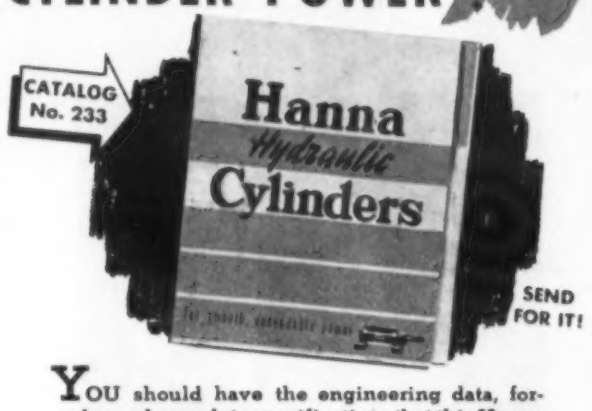
15 SO. MARKET STREET

DEPT. 104-NA • CHICAGO 6, U.S.A.

▲ Mention Item NED-5712 when writing ▲

. . . it's full of information

on HYDRAULIC CYLINDER POWER



YOU should have the engineering data, formulae and complete specifications that this Hanna catalog contains — it will simplify your problem of planning and selecting the Hanna Cylinders you need for each specific application.

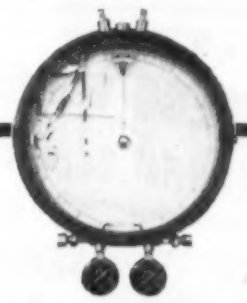
A copy is yours for the asking—just say: "Send me Catalog No. 233." No obligation, of course.

HANNA ENGINEERING WORKS

1765 ELSTON AVENUE • CHICAGO 22, ILLINOIS

RIVETERS • CYLINDERS • AIR HOISTS

▲ Mention Item NED-5713 when writing ▲



Accurate, Automatic

RELATION CONTROL

On any process where two variables must be held in definite relationship through control of only one, a Foxboro Relation Controller effectively solves the problem. For instance, it may be necessary to hold one temperature of a process 20° higher than a certain uncontrolled temperature . . . or to control a pressure in relation to an uncontrolled temperature. Foxboro's Relation Controller automatically and continuously maintains the desired relationship and provides accurate graphic records.

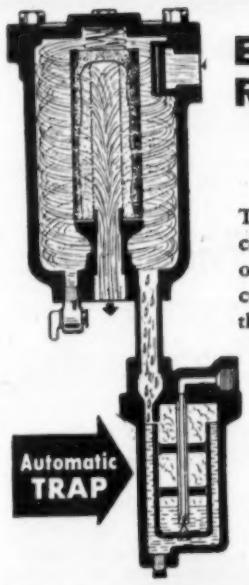
A note outlining your requirements will help us be of service to you. Write **The Foxboro Company, 134 Neponset Avenue, Foxboro, Massachusetts, U. S. A.**

FOXBORO Reg. U. S. Pat. Off. RELATION CONTROL

▲ Mention Item NED-5714 when writing ▲

Poro-Stone Filtration

FOR COMPRESSED AIR



EFFICIENTLY REMOVES:

OIL, WATER PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 104.

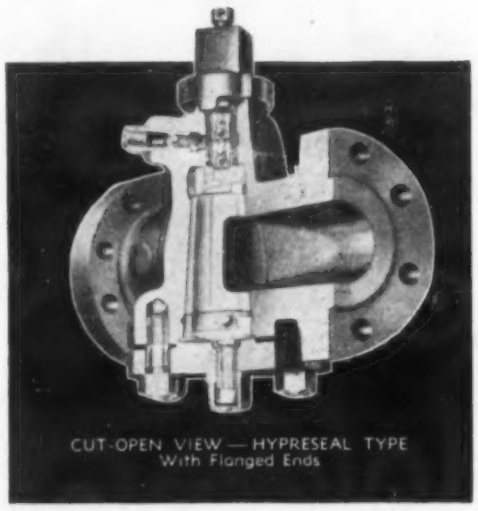
R. P. ADAMS CO., INC.

63 Chicago St. • Buffalo, N. Y.

ADAMS *Poro-Stone* AIR FILTER

▲ Mention Item NED-5715 when writing ▲

NORDSTROM *Lubricated* PLUG VALVES



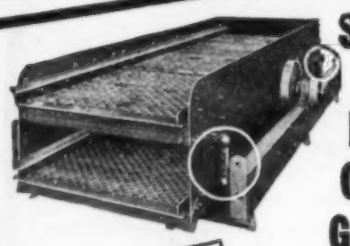
Resist corrosion and erosion • Keep upkeep down

MERCO NORDSTROM VALVE CO.

A Subsidiary of Pittsburgh Equitable Meter Co. Main Offices: 400 Lexington Ave., Pittsburgh 8, Pa. Branches: Atlanta, Boston, Brooklyn, Buffalo, Chicago, Columbia, Houston, Kansas City, Los Angeles, New York City, Oakland, San Francisco, Seattle, Tulsa

▲ Mention Item NED-5716 when writing ▲

There is . . . a Right *SECO Vibrating Screen for any Industrial Screening Need



Every SECO Screen has this POSITIVELY CONTROLLED Gyrating Action

Puts Every Inch of Surface to Work!

You get important results such as increased capacity due to sharper whip, minimum of blinding and closer, surer grading. Dependable, time proven Seco Screens are on the job, everywhere.

*A Right SECO for every material FINE • COARSE LIGHT • HEAVY

Seco Patented Auxiliary Vibrator enables efficient screening of damp, sticky materials.

Send Today for Free Catalog, Dept. D.

SECO SCREEN EQUIPMENT CO., INC.
9 Lafayette Avenue, Buffalo 13, N. Y.

▲ Mention Item NED-5717 when writing ▲

Get THESE *Booklets*

To help you with today's as well as tomorrow's problems, the following free, factual booklets have been prepared. Simply check those you want.

- ☐ **Uni-Shell Integral HP Motors** Open, drip-proof, splashproof, enclosed fan cooled, totally enclosed single phase repulsion or capacitor start, polyphase induction, dc motors and generators, Form No. 1845.
- ☐ **Fractional HP Motors** General purpose split phase, capacitor start induction, repulsion start induction. Condensed motor price list. Form No. 1709-C.
- ☐ **Matched Motor Parts** Fractionals: Repulsion start, split phase, capacitor start, capacitor, polyphase induction, 60 and 180 cycle, series. Integrals: Series, polyphase induction, 60 and 180 cycle. Form No. 1871.
- ☐ **All-Purpose Moyno Pump** Horizontal, vertical, tubular. For easy, efficient handling of liquids, semi-solids, gases. Form No. 1833.
- ☐ **Large and Small Electric Hoists** Specifications, construction, application information on R & M hoists ranging from 1 to 7½-ton capacity. Bulletins No. 800, 801, W816, 7171-A.
- ☐ **Electric Traveling Cranes** Fast-speed capacities to 10 tons, slower-speed to 25 tons. Specifications, construction, application, single and double I-beam, gantry, and wall-bracket jib. Bulletin 825.
- ☐ **Exhaust and Ventilating Fans** Dimensions, performance, prices on 12 to 30-inch exhaust and ventilating fans. Form No. 1764-A.
- ☐ **R & M Machine Drives** Designed to match the life of the machine tool. Twelve-point check chart of important features. Specifications and prices. Form No. 1835.

NAME.....
ADDRESS.....
CITY..... *STATE*.....

ROBBINS & MYERS • INC.
Springfield, Ohio (In Canada: Robbins & Myers Co. of Canada, Ltd., Brantford, Ont.)

▲ Mention Item NED-5718 when writing ▲

FIRE EXTINGUISHER

Capable of being moved and operated with single sweeping action, 25-pound wheel type carbon dioxide fire extinguisher is especially adaptable for use in combatting gasoline, oil, paint, machine, electrical and surface fires in all types of industrial and commercial locations. By grasping handle and operating palm-trigger valve, operator can move unit and direct blanket of carbon dioxide in large 10 to 20 foot arc. Release of trigger stops flow of fire-smothering gas. Horn-hose connection permits operator to direct stream into base of flames. Unit is mounted on hard rubber wheels and is self-balanced whether standing or in use. Made by **Randolph Laboratories,** 8 E. Kinzie St., Chicago 11, Ill.

▲ Mention Item NED-5719 when writing ▲

TYPE HOLDER

Accommodating four type sizes and up to twenty characters, Mercury interchangeable type holder speeds part marking operations by enabling user to stamp entire number on part with single blow of hammer. It is so constructed that type cannot be placed in it upside down. All type is rigidly held in alignment so that part numbering is neat and fully legible.

Holder consists of three simple parts; body, anvil and release button. Anvil, containing type, is slidably connected to body so that it can be opened and closed by pressing release button. When open, type can be quickly placed in proper sequence in holder. Pulling back on release button then slides anvil back and locks it firmly so that type is held in place. Holder is available with shank to fit hand, arbor or kick presses, as well as in hand model shown. Made by Mercury Metal Die & Letter Co., 546 E. Sixteenth St., Los Angeles 15, Calif.

▲ Mention Item NED-5720 when writing ▲

DO YOU KNOW?

Extruded Tennessee Eastman Tenite sleeves over fluorescent lamps are dyed by special process to filter black light to activate fluorescent treated dials and knobs on aircraft instrument panels. No transformers are required and no heat is generated. Cost is claimed to be fraction that of normally used black light sources. Made by Lion Mfg. Co., 2640 Belmont Ave., Chicago 18, Ill.

▲ Mention Item NED-5721 when writing ▲

NEW IMPROVED MONARCH UNI-POINT RADIAL SAW

GREATER WOODWORKING PRODUCTION PER MAN-HOUR

•

SAFE ACCURATE VERSATILE

•

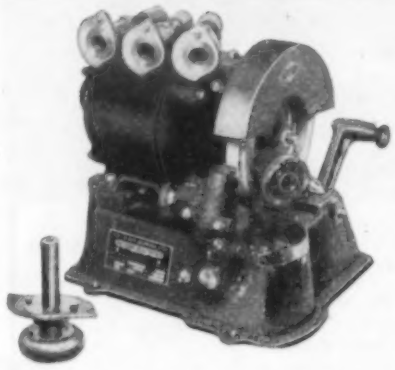
Safe and accurate for cross-cutting, simple or compound mitering, ripping, and (with simple attachments) for routing, shaping, sanding and other woodworking operations. Used in leading aviation and other war plants.

Send for Catalog NED

AMERICAN SAW MILL MACHINERY CO.
Manufacturers of complete lines of modern designed woodworking and saw mill machinery, saws, and accessories.
115 MAIN STREET HACKETTSTOWN, N. J.

▲ Mention Item NED-5722 when writing ▲

BLACK DIAMOND
• PRECISION DRILL GRINDERS •



SAWS BLACK DIAMOND TOOLS

YOUR POST-WAR DRILL GRINDER IS AVAILABLE TODAY

WHEN you need sharp, small gauge or fractional drills in quantities—it costs real money to put an experienced mechanic to work on them.

With a Black Diamond, even the most inexperienced laborer can keep all small drills ready to meet any emergency—with lips accurately ground to exactly the same length and proper angle and with correct clearance for fast, precision drilling.

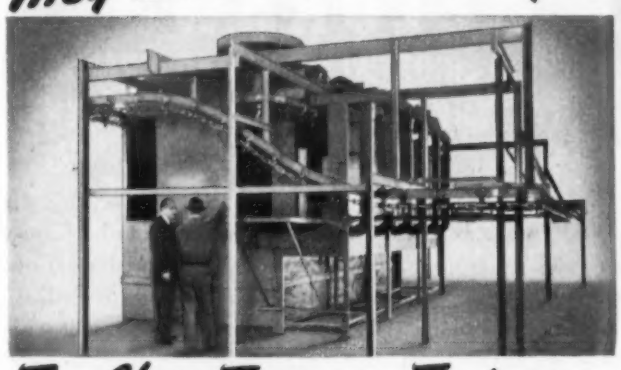
This machine cuts grinding costs 50% and more, saves expensive drills, reduces drill breakage and actually pays for itself in a short time.

And when you order a Black Diamond be sure to include the web thinning attachment which accurately grinds Notched, Colton, or so called Crank Shaft points. Write for illustrated folder today.

BLACK DIAMOND SAW & MACHINE WORKS, INC.
NATICK, MASSACHUSETTS

▲ Mention Item NED-5723 when writing ▲

They don't come too Big!



For Alvey-Ferguson Engineers...

TWENTY-SEVEN TONS of water are required to fill this huge A-F Cleaning and Drying Machine to operating level. SIZE ALONE, however, is not the true test of operating efficiency. Incorporated in this 14-foot giant are special processes and an engineering skill that cannot be described here. If you have a cleaning and finishing problem and one of our standard machines will not solve it, please remember that our engineers are specialists in custom-built equipment! Write today.

THE ALVEY-FERGUSON CO., 39 Disney Street Cincinnati 9, Ohio

CONVEYING EQUIPMENT
Alvey-Ferguson
METAL PRODUCTS CLEANING & FINISHING EQUIPMENT

▲ Mention Item NED-5724 when writing ▲

TURCO AKTIV DOES THREE JOBS IN ONE SIMPLE OPERATION

When Turco chemists formulated Aktiv, they produced a specialized cement floor cleaner that emulsifies grease and oil thoroughly and quickly. It penetrates deeply into cracks and surface pores, ordinarily uncleanable; dirt comes to the surface, where cold water will flush it away without leaving a trace. What's more, it sanitizes and whitens cement with a non-injurious bleaching action.

Aktiv, a granular material, dissolves completely in water, so that you may make it into a stock solution. Or sprinkle it on a wet floor, work it into cracks and rough spots with broom or brush, hose off and mop with clear water. No hard scrubbing or scraping is necessary. *Aktivating* cement floors is inexpensive. Let the Turco Field Service Man show you. Write us today for Bulletin NED 10 Ask about other Turco specialized products.

TURCO
INDUSTRIAL CHEMICAL COMPOUNDS

Main Office and Factory: 6135 S. Central Ave., Los Angeles 1 • *Southern Factory:* 1606 Henderson St., Houston 10, Tex. • *Chicago Factory:* 125 W. 46th St., Chicago • *Service-Men and Warehouse Stocks in All Principal Cities*

▲ Mention Item NED-5725 when writing ▲

ANNOUNCING THE

New WETMORE REAM-MOR PROCESSED REAMER BLADES

GREATER WEAR RESISTANCE
LONGER CUTTING LIFE
LOW IN COST

REAMER BLADES that are—longer wearing, harder, tougher, better cutting—those are the results of Wetmore REAM-MOR processing.

These new blades were developed through long research and experimental work done by Wetmore metallurgists and engineers, in the laboratory, plant and field. They are the product of broad reamer experience and a desire to create an economical high speed steel blade specially processed, that would have the wear resistant qualities of "premium" alloys.

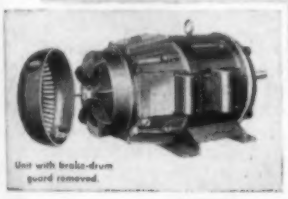
Developed by a reamer manufacturer especially for better, low cost reaming, Wetmore REAM-MOR Blades are another example of Wetmore Quality Tool Service. Available for all model Wetmore Reamers—why not try a set and increase production, reduce grinding—and lower blade costs.

Send for the New REAM-MOR *blade bulletin for complete details.*

WETMORE REAMER CO.
417 North 27th Street, Milwaukee 8, Wisconsin

▲ Mention Item NED-5726 when writing ▲

Wagner
MOTOR AND HYDRAULIC BRAKE UNITS



Hydraulic pressure developed in either a foot or an air-operated master cylinder is used to apply the internal type brake built as an integral part of the operating motor.

MOTORS
TRANSFORMERS
UNIT SUBSTATIONS
INDUSTRIAL BRAKES
BRAKE LINING

Inquire as to the sizes available and about any brake application problem that you may have.

BACK THE ATTACK—BUY U.S. WAR BONDS

Wagner Electric Corporation
ESTABLISHED 1891
6477 Plymouth Avenue, St. Louis 14, Mo., U. S. A.
ELECTRICAL AND AUTOMOTIVE PRODUCTS

▲ Mention Item NED-5727 when writing ▲

BETTER, MORE PROFITABLE METAL JOINING FOR YOU

. . . out of wartime's revealing experience with

SIL-FOS and *EASY-FLO*

SIL-FOS and EASY-FLO are not war babies. But war's need for fast production skyrocketed their use to "believe-it-or-not" proportions on a multitude of war products.

Like a "believe-it-or-not" also are the **results** obtained with these alloys—astonishing production rates—big savings in man-hours—vital conservation of metals—surprisingly low costs. War has taught industry how to get full benefits from SIL-FOS and EASY-FLO brazing speed, strength and economy—lessons already being capitalized on many new post-war products.

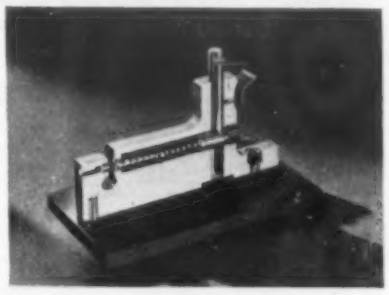
AT THE METAL SHOW
BOOTH No. E-140
—a revealing exhibit of SIL-FOS and EASY-FLO metal joining performance in war and peace. . . .

IF YOUR PRODUCTS involve metal joining, find out how SIL-FOS and EASY-FLO can help you make better joints at lower cost. BULLETIN 12-A gives details. Write today for your copy.

HANDY & HARMAN 82 Fulton St., New York 7, N. Y.
Agents in Principal Cities. In Canada: HANDY & HARMAN of Canada, Ltd., Toronto

▲ Mention Item NED-5728 when writing ▲

HOLE PUNCHING UNIT

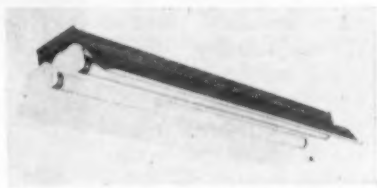


Holes are readily punched in flanges, angles, container sides and similar shaped and formed work with type H Wales horizontal hole punching units. Punch moves horizontally so that holes are punched in sides of work. Each unit is self-contained and any number may be placed and replaced on press brake rails or on templates in stamping presses to punch unlimited straight-line patterns. Minimum center-to-center distance is ⅞ inch. Punch, dies, guide and stripper spring are held as independent unit by holder.

Holder keeps punch and die in perfect alignment. To make set-up, it is necessary only to place units in position according to master pattern and begin punching at first stroke of press ram without further adjustment. Patterns may be set up outside of press, thus minimizing nonproductive time from press. All working parts of units are hardened and ground. Holders are of steel. Punches and dies are removable for sharpening. Made by **Wales-Strippit Corp.**, 363 Payne Ave., North Tonawanda, N. Y.

▲ Mention Item NED-5729 when writing ▲

FLUORESCENT REFLECTOR

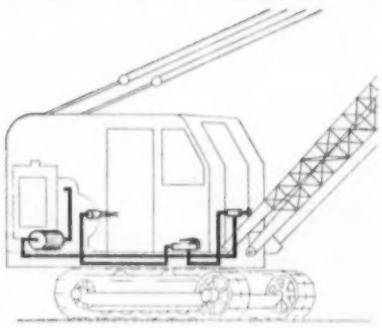


Design feature of line of industrial fluorescent lighting fixtures is V Controlled light reflector which is claimed to afford maximum light output. Light loss is minimized because light is directed to working plane. Fixtures are of steel construction and are available for variety of mounting methods. Captive-turn positive reflector fastener is used for ease of maintenance. Baked porcelain enamel finish is available. Made by **A. L. Smith Iron Co.**, Dept. D, 217 Everett Ave., Chelsea 50, Mass.

▲ Mention Item NED-5730 when writing ▲

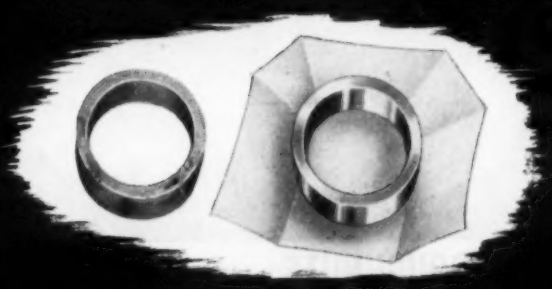
CRANE SAFETY DEVICE

Positive protection is afforded against raising crane booms beyond safe elevation limit by this Thomas automatic boom stop control. Air or vacuum operated, device disengages main drive clutch instantly when boom is raised above safe limit. Limit control valve mounted on cab frame in line with one leg of boom is positioned to contact boom when it reaches maximum safe elevation. Operation of valve is immediate and boom is stopped without shock or strain. Made by **Industrial Equipment Co.**, Fifty-ninth & Doyle Sts., Emeryville 8, Calif.



▲ Mention Item NED-5731 when writing ▲

PAPERS FOR INDUSTRY



ANTI-TARNISH PAPER PROTECTED ONE

Avoid tarnish, corrosion and rust of metal parts by wrapping with Central's (chemically controlled) papers — laboratory checked for protection against weather and chemical fumes.

FREE BOOK — A complete story of Papers for Industry and how they can improve products and cut costs. Write for "Industrial Paper — The New Production Answer."

REG. U.S. PAT. OFF.

CUSTOM BUILT AND SPECIALTY PAPERS CENTRALINE

CENTRAL PAPER COMPANY INC.
2436 Lakeshore Drive, Muskegon 28, Michigan

▲ Mention Item NED-5732 when writing ▲

LET THIS "ROBOT" OPEN AND CLOSE YOUR DOORS

SAVING WAYS IN DOORWAYS

KINNEAR ROLLING DOORS

▲ Mention Item NED-5733 when writing ▲

"Take it away" with

CM HERC-ALLOY SLING CHAIN

Every Inswell electric-welded link in this CM Herc-Alloy steel sling chain personifies safety and lifting strength. From the white hot ingots in the nation's steel mills to the finished structural girders for our skyscrapers, CM Herc-Alloy Sling Chains have been doing a handling job that ranks them "tops" in industry . . . "tops" in dollar value, service life, maximum safety or any other yardstick of measuring.

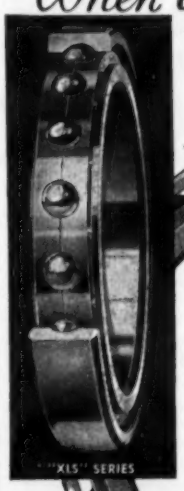
Ask your mill supply distributor about the particular CM Herc-Alloy Sling Chain for your job and learn first hand the reasons why the top names in American industry have been using them for years.

COLUMBUS-McKINNON CHAIN CORP.
Affiliated with Chisholm-Moore Hoist Corp.
General Offices and Factories: 114 Fremont Avenue, Tonawanda, N. Y.
Sales Offices: New York, Chicago and Cleveland

▲ Mention Item NED-5734 when writing ▲

When You're Cramped for Space

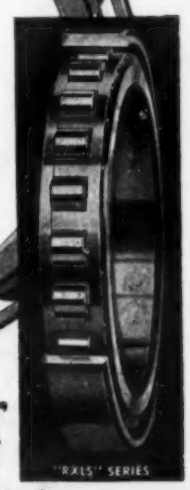
USE THESE VERY LIGHT INCH SERIES BEARINGS



HAVING bores abnormally large, as compared with the outside diameter, they offer the engineer such important advantages as *compactness, light weight and greater latitude in design.*

They are available in ball bearing sizes from 1/8" to 21" bore, and in roller bearing sizes from 1½" to 21" bore.

Write for the Catalog. Let our engineers work with you.



"NORMA-HOFFMANN"

PRECISION BALL, ROLLER AND THRUST BEARINGS

▲ Mention Item NED-5735 when writing ▲

. . . and why take chances with dust or fume hazards either? Do as thousands do, wear a . . .

DUPOR CHEMICAL CARTRIDGE RESPIRATOR No. 10

Unit is equipped with NEW colored plastic cartridges for quick identification. Code "A" white—Code "B" black—Code "AB" yellow. They're sturdier than metal or paper cartridges. Won't crush and spill chemicals. No corrosion. Price $54 doz. Sample $4.50 postpaid.

GOLDEN JUBILEE 1894 1944 H.S. COVER

Write for Catalog!

105 Chippewa Street | South Bend, Indiana

▲ Mention Item NED-5736 when writing ▲

PRECISION HAS FAILED

(A DISCUSSION OF TODAY'S ASSEMBLY PROBLEMS)

When a precision-part assembly is rejected in any plant, Precision has failed.

When two or more mechanisms assembled from interchangeable, identical precision parts vary in performance, Precision has failed.

Although science and craftsmanship are producing interchangeable parts to extreme tolerances, final precision is determined on the assembly line. And what does the man or woman with the wrench know about ten thousandths of an inch? Or half an inch-pound torque? Some understand. Most do not.

By giving the man with the wrench the proper tool for precision assembly, Douglas Aircraft Company, in one instance, reduced inspection complaints on an assembly from 100 to 6 per day. Case histories show how we have helped many leading manufacturers to reduce rejects, cut costs, achieve identical peak performance operation of precision mechanisms, produce faster. For one of the requisites to precision assembly is precision torque.

Let our engineers discuss this particular phase of manufacturing with you. Write to Department **NED-10.**

RICHMONT, INC.

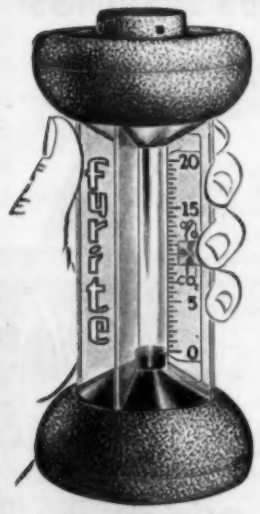
Originators of Precision Assembly Methods • Manufacturers of the Livermont Torq-Stop Wrench, the precision production-line torque wrench • 215 West 7th Street, Los Angeles 14, California
Eastern Representative, 428 New Center Building, Detroit 2, Michigan

▲ Mention Item NED-5737 when writing ▲

COOPERATE with the NATIONAL FUEL EFFICIENCY PROGRAM TO SAVE VITAL WAR FUELS

USE THE PRACTICAL FYRITE CO_2 INDICATOR

REVEALS FUEL WASTE INSTANTLY!



$18.50 COMPLETE WITH INDUSTRIAL TYPE FLUE FILTER

CO_2 analysis of the flue gases is the only method available for determining the percentage of fuel wasted up the stack. The practical FYRITE CO_2 Indicator makes accurate flue gas tests easy—quickly pointing the way to adjustments and repairs necessary to secure efficient fuel utilization. The FYRITE requires no skill or technical knowledge; is simple and rugged; has no valves, clamps, or leveling bottle, no glass parts or batteries.

OXYGEN INDICATOR designed on same principle available soon. Write for particulars.

RETURN THIS COUPON FOR BULLETIN 341 on FYRITE. *Learn how to get immediate delivery under priority regulations.*

Name

Address

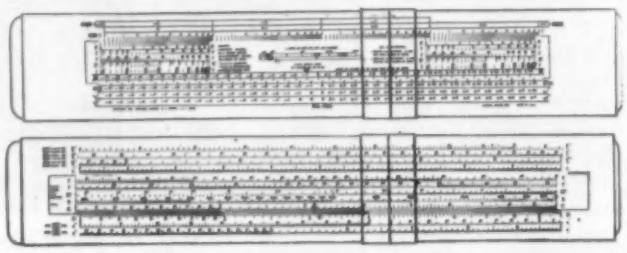
City State

HEATING SERVICE DIVISION
BACHARACH
Industrial Instrument Co.
7000 BENNETT ST.
PITTSBURGH 8, PA.

▲ Mention Item NED-5738 when writing ▲

ENGINEER'S SLIDE RULE

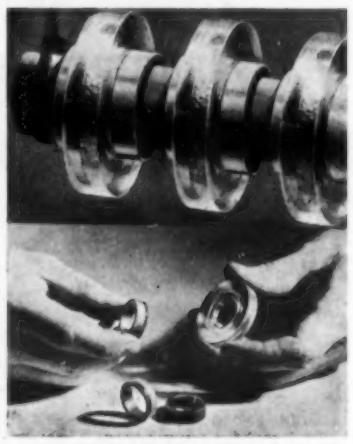
Featuring decimal point locator, this slide rule provides for mechanical determination of decimal point in involved expressions with results up to 19 digits or zeros. Design is



claimed to afford 30-inch scale accuracy for cube root and 20-inch scale accuracy for square root determinations on this rule with 10-inch scales. Only single setting of hairline slide is required for square root, cube root and logarithm readings, with one setting of hairline to determine number of digits or zeros in square and cube roots. Relatively complicated expressions can be evaluated and pointed off by users with limited amount of mathematical background. Made by **Pickett & Eckel**, 53 W. Jackson Blvd., Chicago 4, Ill.

▲ Mention Item NED-5739 when writing ▲

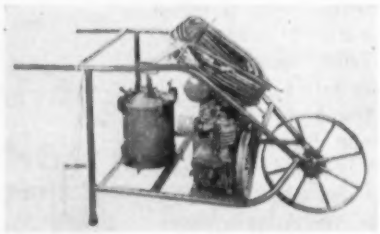
PLASTIC MASKING JIGS



Used in process of copper plating carbon rings, Plexiglas masking jigs replace previously used scarce materials. Because of machinability, dimensional stability and lightness in weight, this material has reduced rejects and increased production. Carbon rings to be plated are inserted in grooves 1/64 inch wide on either side of jig rings. They are then mounted in gang fashion on carbon rod. Electrodes are attached and entire assembly is placed in plating solution. Application developed by Morganite Co., Long Island City, N. Y. Plexiglas made by **Rohm & Haas Co.**, 222 W. Washington Sq., Philadelphia, Pa.

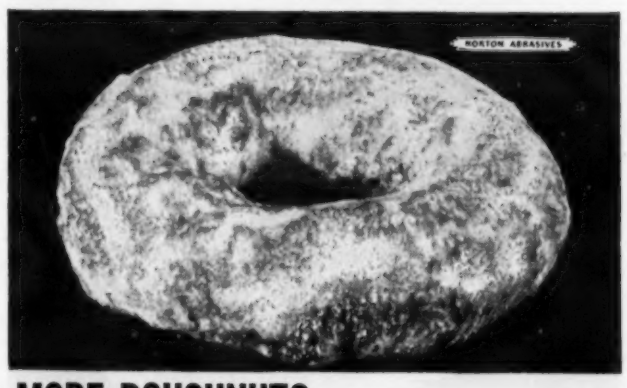
▲ Mention Item NED-5740 when writing ▲

ANTI-MALARIA SPRAYER



Mounted on wheelbarrow type frame of steel pipe with one wheel in front and stand in back, this portable air compressor and spray outfit is designed for wheeling to any site where malaria-carrying mosquitos breed. Powerful spray of insecticide is generated for completely covering area. This spray outfit has been developed for use by the armed forces. Made by **DeVilbiss Co.**, 301 Phillips Ave., Toledo 1, O.

▲ Mention Item NED-5741 when writing ▲



MORE DOUGHNUTS from "Metalite" Cloth Belts

The Doughnut Corporation, Ellicott City, Maryland, using an Idler Backstand and these outstanding abrasive cloth belts, increased output of machine parts from 2½ to 3 times and in other cases cut time of finishing as much as 60% compared to set-up wheels.

Let one of our practical men tell you all about the several makes of Backstands and explain their advantages when equipped with "Metalite" Belts built for that very purpose.

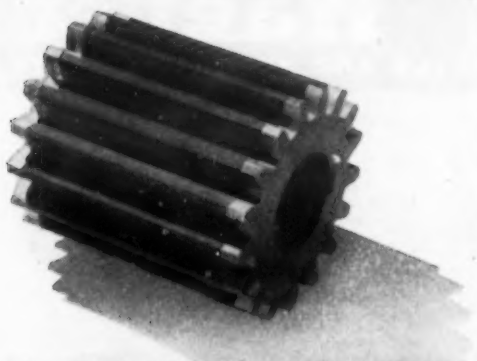
BEHR-MANNING
(DIVISION OF NORTON COMPANY)
TROY, N. Y.

▲ Mention Item NED-5742 when writing ▲

—a new FULLY ADJUSTABLE Threader for pipe up to ¾" and bolts up to 1". *Write for Catalog 44*

BEAVER PIPE TOOLS, INC.
1044 HENRY AVE. WARREN, OHIO

▲ Mention Item NED-5743 when writing ▲



G-E FABROIL GEARS

The application of plastic materials to machines has done much to reduce objectionable noises which arise from gear trains. In clock mechanisms, automobile timing gears, variable speed transmission machine drives, and gear reductions of every description, nonmetallic Fabroil gears are introduced for their noise reducing qualities. Fabroil gears are 30 to 40 times as resilient as steel, permit tooth deflections which absorb vibrations, are strong, tough and long wearing. They operate at their best when alternated in a gear train with metal gears. For further information write Section L-245, One Plastics Ave., Pittsfield, Mass.

PD-246

PLASTICS DIVISIONS
GENERAL ELECTRIC

▲ Mention Item NED-5744 when writing ▲

$17,000,000

was levied last year against employers, including hotel management, for violations of the Fair Labor Standards Act. Incomplete records were largely to blame. Continuing inspections threaten violators. A survey shows 4 of every 10 employers will fail to meet the 4 minimum requirements. The Simplex Payroll Recorder provides, automatically, all data for proper record keeping. It simplifies and speeds payroll make-up. It protects against exposure to stiff penalties. Folder D-10 tells about this new, amazing recorder. Write Simplex Time Recorder Co., Gardner, Mass. Branch offices in principal cities.

▲ Mention Item NED-5745 when writing ▲

▲ Mention Item NED-5746 when writing ▲

MOTORIZED PRESS

Adaptable for marking, forming, notching, pressing, broaching, assembling and other operations, this gap style motorized press is made in 10 and 20-ton models with 10 per cent extra tonnage available. Hand lever hydraulic valve controls ram movement through feed, hold or return position.

Unit is equipped with 220-volt, 60-cycle, 3-phase motor as standard equipment. The 10-ton press furnishes four complete strokes per minute and 20-ton model furnishes two. Motor driven hydraulic pump furnishes 1¾ gallons of oil per minute to ram giving 1.5 inches per second ram speed in 10-ton press and 0.8 inch per second for 20-ton press.

Motor drive unit can be purchased separately equipped with table top to be used for testing hydraulic equipment or as hydraulic test bench and furnishes up to 4500 pounds per square inch pressure. Made by **Reimuller Brothers Co.**, 9400 Belmont Ave., Franklin Park, Ill.

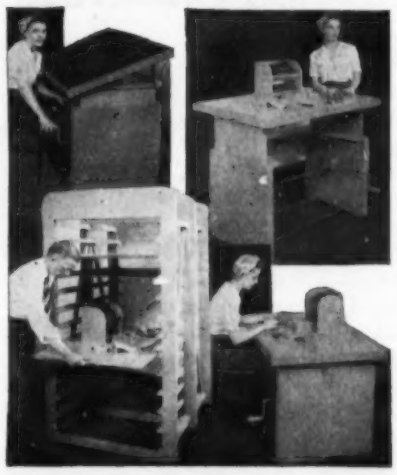
▲ Mention Item NED-5748 when writing ▲

ANTI-FOG COMPOUND

Preventing forming of mist, fog or steam on any type of glass or plastic surface, Merix anti-fog liquid compound is non-inflammable, non-toxic and non-acid. It keeps indefinitely and is not affected when exposed to light. Compound can be applied easily with soft cloth or cotton batting. It cleans surfaces without harming softest plastic so as to remove any form of dust, dirt or fingerprints. Made by **Merix Photo Co.**, Dept. 60, Wrigley Building, Chicago 11, Ill.

▲ Mention Item NED-5749 when writing ▲

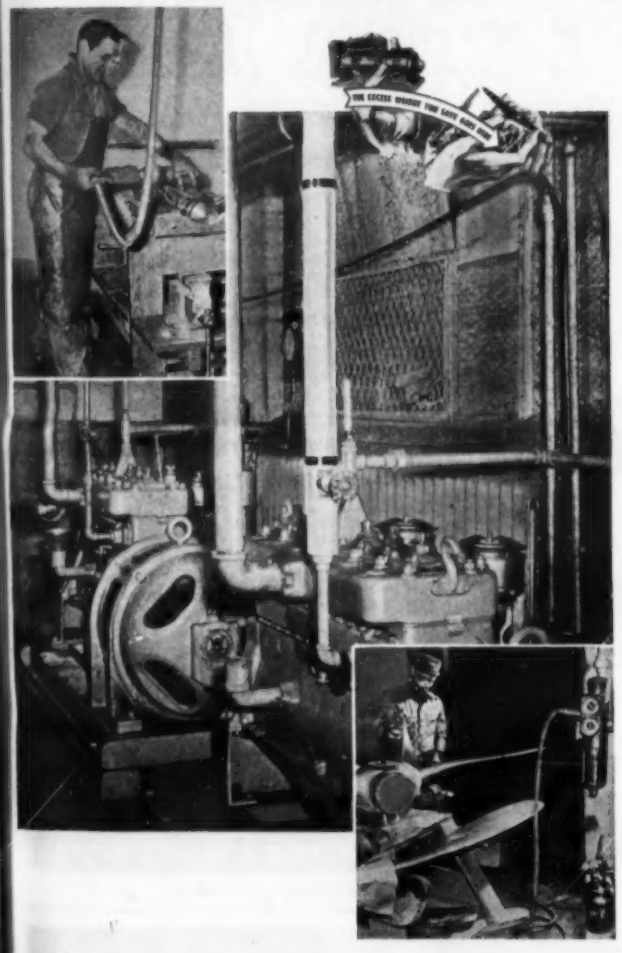
ADJUSTABLE WORK TABLE



Interchangeable tops which raise, tilt or are removed easily are features of this Rightop work table. Up to twelve table tops with work areas to suit given jobs may be used by single operator. Equipment is particularly suitable for assembling operations which vary, in that table tops may be changed to fit required set-up.

Height is adjustable by turning crank, thus permitting maximum production whether operator is sitting or standing. Top may be tipped to any required angle. Rack holds up to twelve tops ready for immediate use. Distributed by **Voss Machinery Co.**, 2844-C W. Liberty Ave., Pittsburgh 16, Pa.

▲ Mention Item NED-5750 when writing ▲



Here's An Air Compressor *for many uses*

This illustration shows a Schramm Air Compressor furnishing air for sanding and paint spraying airplane propellers.
Schramm stationary units fit the need for compressors that can do a variety of jobs in industrial and power plants.
Check these uses to which you can put Schramm in your plant: operating milling and drilling machines . . . chipping and calking hammers . . . cleaning engines and generators . . . sand blasting grooving bearings . . . cleaning boiler flues . . . and every other pneumatic tool requirement. Write today for latest bulletin.

SCHRAMM INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

▲ Mention Item NED-5747 when writing ▲

DISTRIBUTOR TERRITORIES OPEN — WRITE FOR DETAILS

▲ Mention Item NED-5751 when writing ▲

Typical spring of beryllium copper, and Homo Method equipment which heat-treats such parts for service in war-needed mechanisms.

HOMO METHOD HELPS HEAT-TREAT SPRINGS OF BERYLLIUM COPPER

In the hardening of springs made of beryllium-copper, the Accurate Spring Mfg. Co. has found that the Homo Method is the sure way to rapid, precise and uniform heating required by this modern alloy. No reject in the Accurate plant has ever been charged to Homo Method . . . Homo is available in many sizes. If you have a heat-treatment problem requiring accurate or fast or dependable work, an L&N engineer will gladly talk it over with you, or send Catalog T-625, as you prefer.

LEEDS & NORTHRUP COMPANY
4985 STENTON AVENUE, PHILADELPHIA 44, PENNA.
LEEDS & NORTHRUP
MEASURING INSTRUMENTS · TELEMETERS · AUTOMATIC CONTROLS · HEAT-TREATING FURNACES
JrlAdT-625(32C)

▲ Mention Item NED-5752 when writing ▲

Allison model #3 for 2½" spindles and under—with 1⅝" collet capacity has full circular low pressure cam that activates the collet closing mechanism, eliminating any stock slippage.
Write for new Allison catalogue — SEE YOUR LOCAL DISTRIBUTOR.

Allison TOOL AND ENGINEERING CO.
4031 Whittier Boulevard, Los Angeles 23, California

▲ Mention Item NED-5753 when writing ▲

There are over

SIXTY THOUSAND

SPERRY EXACTOR REMOTE CONTROLS in use!

The Sperry EXACTOR Hydraulic Remote Control is a simple, unique, single-tube system designed to control mechanisms over distances up to 200 feet. The more than 60,000 EXACTORS in operation today, solving the remote control requirements of design engineers in many fields, are proof of the thorough engineering and trouble-free design incorporated in this system.

It is accurate to a fraction of a degree and entirely self-contained, reproducing applied motion without the aid of an auxiliary source of power. It presents no installation problem, because both the Transmitter and Receiver are compact and light in weight, and the tube which connects them can be bent around obstacles easily. Vibration does not interfere with its positive, reliable action and means is provided for periodic temperature compensation.

If you have a remote control problem — in the railroad, marine, automotive, aviation, or any of the industrial fields — you will want our completely descriptive booklet. Send for it today.

The Sperry EXACTOR HYDRAULIC REMOTE CONTROL is rated at 400 inch-pounds in one direction, through 55° of motion, and 100 inch-pounds on the return.

Positive control, through a single tube

FILL OUT AND MAIL COUPON BELOW · NO OBLIGATION

SPERRY PRODUCTS, INC. N.E.D. E-C-1044
HOBOKEN · NEW JERSEY

Gentlemen: Please send me, at no cost, a copy of your Bulletin 78-D containing complete details on your EXACTOR HYDRAULIC REMOTE CONTROL.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

SPERRY PRODUCTS INC. HOBOKEN NEW JERSEY

▲ Mention Item NED-5754 when writing ▲

RUBYFLUID
the Perfect Soldering FLUX

. SAVES TIME . SAVES MONEY

Do you demand quality, economy and efficiency in soldering products? Then you can't be without Rubyfluid. Available in liquid or paste, Rubyfluid is easy to use, fast acting, produces strong joints.

FOR STAINLESS STEEL

Ruby's Stainless Steel Flux, made particularly for stainless steel, requires no special equipment. You'll find it very economical to use.

Ask your jobber or write direct

RUBY CHEMICAL CO.
72 McDowell St. Columbus, Ohio

Rubyfluid

▲ Mention Item NED-5755 when writing ▲

● Udylite Metal Finishing Supplies are the finest available—dependable, efficient, carefully tested and approved in our own laboratories under actual plant conditions before they are offered to you.

When you buy Udylite supplies you buy a share in one of the finest staffs of engineers and electrochemists in the country. These men know metal finishing from A to Z and their combined "know-how" is at your service to solve any finishing problems you may have. They'll not only put you right but they'll keep you that way by constant check and control if you wish. There, is something money cannot buy. It's Udylite's plus value at no extra cost.

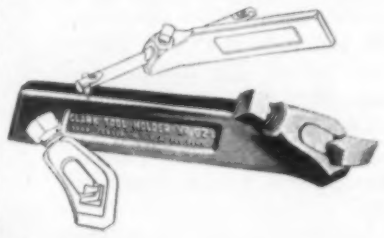
VISIT THE UDYLITE EXHIBIT D628-D632—
NATIONAL METAL EXPOSITION—CLEVELAND

THE UDYLITE CORPORATION
1651 E. Grand Blvd., Detroit 11, Mich.
Chicago 12, 1940 Walnut Street · Long Island City 1, N. Y., 11-16 44th Drive · Cleveland 3, 4408 Carnegie Ave.

▲ Mention Item NED-5756 when writing ▲

ADJUSTABLE TOOL HOLDER

Usable in lathes, planers and shapers, adjustable tool holders are available in 15-degree sloping cutter channel type or parallel channel type in both right and left hand offset. Each type can be furnished in several shank sizes. Any of four or more sizes of tool bits may be used in same holder. This speeds production by enabling operator to change bit sizes without changing holders.



Vise-grip jaw holds bit horizontally and vertically with pressure evenly distributed, thus minimizing bit breakage. Short bits are held firmly. Tool is especially suitable for using hard cast alloy bits without breakage. Round boring bars are held securely for boring or inside threading operations. Holders are drop forged of tool steel and are heat treated for maximum wear resistance. Made by **Robert H. Clark Co.**, 9330 Santa Monica Blvd., Beverly Hills, Calif.

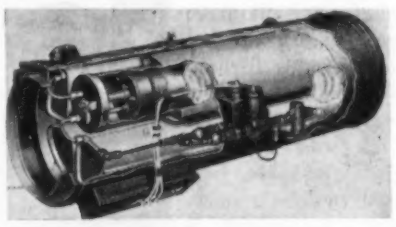
▲ Mention Item NED-5757 when writing ▲

INSULATING PROCESS

Named Zanderoll process, method for application and treatment of insulating varnish on armatures and stators is claimed to result in 50 to 90 per cent reduction in treating time over previously used methods; eliminate varnish drainage immediately after removal from bath; eliminate necessity for cleaning shafts; afford perfect penetration and filling of windings including slotted sections; dry throughout; give uniform distribution to assure maintenance of balance and maintain flexibility of stator lead wires. Pilot plant is now in operation for demonstration of application to any product. Facilities of Fostoria Pressed Steel Corp., Fostoria, O., and service centers in major cities offer engineering service and production line equipment for licensed operation with this process. Developed by **The Sterling Varnish Co.**, 163 Ohio River Blvd., Haysville, Pa.

▲ Mention Item NED-5758 when writing ▲

AIRCRAFT HEATERS

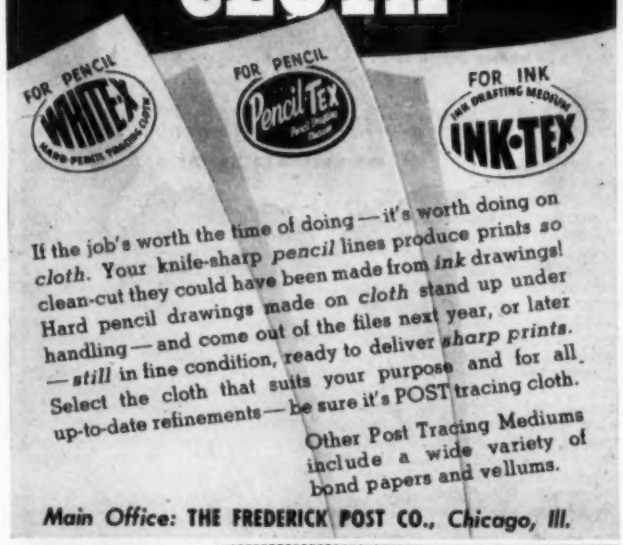


Embodying combustion process known as vapor entraining which uses capillary vaporizing block in conjunction with preheated combustion air, series SRH aircraft heaters are available in capacities of 100,000 and 50,000 British thermal units per hour. Flame is completely suspended to avoid lead oxide formations and prolong life of burner parts. Unusually low pressure drop affords efficient operation at low ram pressures. Flame is claimed to be so stable that its characteristics are the same regardless of plane's altitude or speed. Barometric compensation permits operation up to 40,000 feet.

Multiple heat exchanger compartments give flame and hot gases travel of four times length of exchanger. Blowers can be supplied for ground operation. Made by Fluid Heat Div., **Anchor Post Fence Co.**, Eastern Ave. & Kane St., Baltimore 24, Md.

▲ Mention Item NED-5759 when writing ▲

For BETTER more PERMANENT drawings....TRACING
CLOTH



If the job's worth the time of doing—it's worth doing on *cloth*. Your knife-sharp *pencil* lines produce prints so clean-cut they could have been made from *ink* drawings! Hard pencil drawings made on *cloth* stand up under handling—and come out of the files next year, or later—*still* in fine condition, ready to deliver *sharp prints*. Select the cloth that suits your purpose and for all up-to-date refinements—be sure it's POST tracing cloth.

Other Post Tracing Mediums include a wide variety of bond papers and vellums.

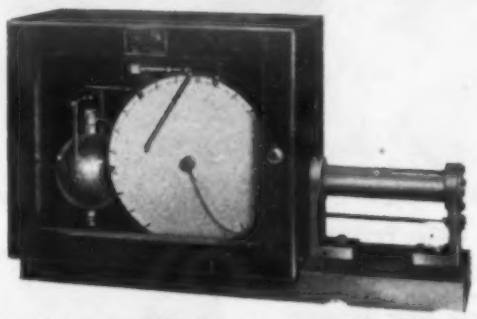
Main Office: THE FREDERICK POST CO., *Chicago, Ill.*

POST

TOLEDO
BLUE PRINT & PAPER CO.
316 SUPERIOR ST. ADAMS 2664

▲ Mention Item NED-5760 when writing ▲

WHY MAJOR COMPANY ENGINEERS SELECT
ARCCO LIQUID GRAVITOMETERS



for Determining Specific Gravity of Highly Volatile Liquids

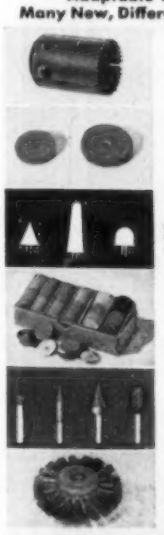
1—OPERATES UNDER ACTUAL LINE PRESSURE—High working pressure prevents release of gas—an extremely important feature in measuring specific gravity of highly volatile liquids.
2—AUTOMATIC TEMPERATURE COMPENSATION—Produces highly accurate and fully corrected record of specific gravity of liquid under any designated standard temperature conditions.
3—CONTINUOUSLY FLOWING SAMPLE—Changes in specific gravity shown with minimum time lag. Pressure necessary to produce required flow is only a few pounds per square inch, except for very viscous liquids.
4—NO MOVING JOINTS OR STUFFING BOXES—Friction and leakage eliminated. Instrument is delicately responsive to minute changes in specific gravity.
5—INDICATING AND RECORDING TYPES—Either type available with automatic temperature compensation. Can also be made of non-corrosive materials.
SEND FOR BULLETIN NO. 111-A

AMERICAN RECORDING CHART CO.
3113 E. 11th St. Los Angeles 23, California

▲ Mention Item NED-5761 when writing ▲

EXTRA JOBS
Done Quick and Easy!

These Accessories Make Any Electric Drill Adaptable for Many New, Different Jobs



WITH Thor
ACCESSORIES FOR PORTABLE ELECTRIC DRILLS

GET MORE FROM YOUR TOOLS AND DO DOZENS OF JOBS FASTER

By use of sanding discs, mounted abrasive wheels and points, rotary files, hole saws and other Thor accessories, specially designed and processed for use with electric drills—of *all* types and makes—you can make your tools adaptable to dozens of different jobs of grinding, sanding, polishing, cutting, filing, sawing and cleaning. You'll get new speed and better work with *genuine* quality Thor accessories used with electric drills.

INDEPENDENT PNEUMATIC TOOL CO.
600 West Jackson Blvd., Chicago 6, Ill.

Genuine Thor Accessories FOR BEST RESULTS

▲ Mention Item NED-5762 when writing ▲

THE AMP KNIFE-DISCONNECT SPLICING SYSTEM
FOR WIRE SIZES 26 TO 10

H-Link. A combination of ends for different wire sizes is available.

Cross Link. A combination of ends for different wire sizes is available.

Stud-Tab where disconnect end can overhang block. Easy horizontal connection and disconnection.

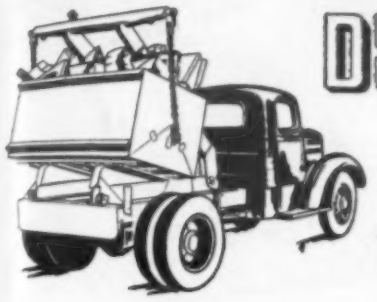
Stud-Tab of rigid design for use where overhang clearance is available. Adaptable to conversion of existing standard blocks to connection blocks.

The basic design of the AMP Splicing Terminal, using identical ends with a knife-switch wiping action, has proven so superior to conventional splicing methods that AMP now introduces a disconnect splicing system to cover a wide variety of adaptations. Typical examples are shown here. Each of these incorporates the same exceptional electrical and mechanical characteristics inherent in the basic design. All current carrying parts are integral stampings of pure electrical copper, having minimum weight. No reduced conductivity alloys.

Write today for your copy of AMP Bulletin 31.

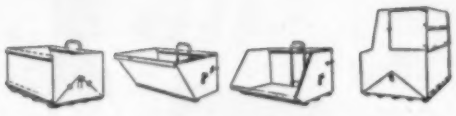
AIRCRAFT-MARINE PRODUCTS INC.
1521-47 NORTH FOURTH STREET, HARRISBURG, PA.
A & M ACCESSORIES, TORONTO, ONTARIO

▲ Mention Item NED-5763 when writing ▲



DEMPSTER DUMPSTER

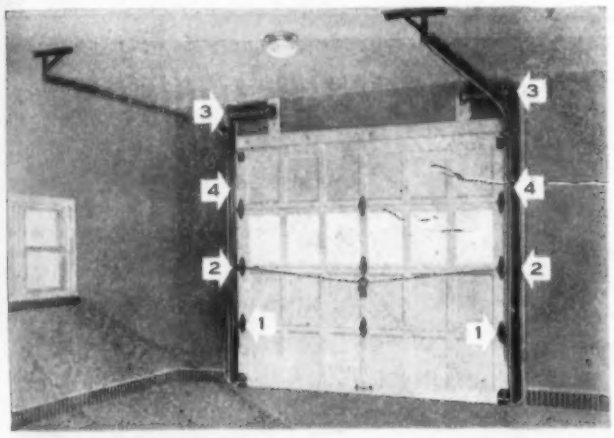
Saves Trucks, Gas, Tires, Manpower



★ Have you ever seen a truck with a dozen, or perhaps twenty or even thirty bodies? That is just what you get with the Dempster-Dumpster. If you are loading by hand, regardless of the type of material, one Dempster-Dumpster unit and the number of bodies you may require will do the work of several trucks. Bodies are placed at convenient places and, when and as loaded, are hoisted, hauled, dumped and returned to place, as truck goes after other loads in an endless cycle.

Bodies built in any number of different types for different materials, but all handled by the same truck unit. Hundreds of industrial plants use the Dempster-Dumpster for every conceivable type of materials handling. Write for free operating manual. Dempster Brothers, Inc., 584 Springdale, Knoxville, Tenn.

▲ Mention Item NED-5764 when writing ▲



Only the **BARCOL OVERdoor** *has All of these features:*

1. Weathertight, rattleproof closing without sticking or binding. Roller-crank action.
2. Self-latching. Spring bolts engage automatically when closing.
3. Tailored "Twin Torsion" balance springs. Safe and quiet. Neat appearance.
4. Continuous vertical track brackets on all doors. Rigid. Conceal and protect cable.

BARCOL

FACTORY-TRAINED SALES and SERVICE REPRESENTATIVES in PRINCIPAL CITIES

BARBER-COLMAN COMPANY
108 MILL ST. • ROCKFORD • ILLINOIS

▲ Mention Item NED-5765 when writing ▲

INDUSTRIAL So-Lo REPAIRS RUBBER

PROLONGS LIFE OF CONVEYOR BELTS ... RESURFACES PULLEYS ... PATCHES RUBBER BOOTS, GLOVES, ETC.

Leading industries use INDUSTRIAL So-Lo. Quickly and efficiently patches and resurfaces breaks, repairs rips, burnt and worn spots, and fills holes in industrial belting. Increases belt life and assures "lower belt cost per mile."

MANY OTHER USES

Wide range of other uses. Resurfaces pulleys—metal, wood, composition. Repairs rubber boots and gloves. Makes metal or concrete stair treads slip-proof, lessening accidents. Also effective for insulating switch handles, foot grips, and other electrical devices.

JUST SPREAD ON— DRIES TOUGH OVERNIGHT

Easy to use. No special tools. Just spread it on to desired thickness—over night it "air vulcanizes". Waterproof—acidproof—oil and grease resistant. Dries smooth and flexible—tough as rubber.

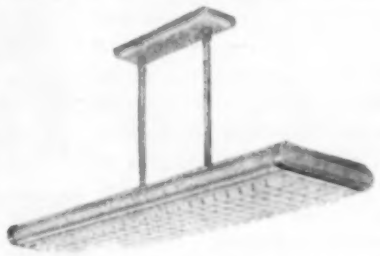
For full details, write AT ONCE to Dept. A-10.

So-Lo Works, Inc.
LOVELAND, OHIO

▲ Mention Item NED-5766 when writing ▲

FLUORESCENT FIXTURE

Adaptable for any commercial installation, Spero LVR-448 fluorescent fixture combines efficiency, modern design, minimum glare and low maintenance costs. Light from four 40-watt tubes is shielded by evenly spaced egg crate louvres, minimizing glare. Reflecting surfaces finished in Plastox white are so arranged as to eliminate trapped light resulting in high intensity with low surface brightness.



Fixture is made for stem or flush mounting. For stem mounting, unit is equipped with attractive ceiling canopy. Unit is available with Insta-Lite providing instantaneous lighting. Made by **The Spero Electric Corp.**, 18220 Lanken Ave., Cleveland, O.

▲ Mention Item NED-5767 when writing ▲

LINEMAN'S TOOL BELT

Made of Klein-Kord material which consists of woven long staple cotton laid in rubber and vulcanized, this lineman's tool belt is designed to hold in readily accessible position those tools most frequently used in power and other electrical line work. Construction assures high tensile strength and resistance to ripping. Punched holes may be used so that friction buckles are not required.

Body strap 2 inches wide is riveted to 4-inch belt and forms four tool loops. Sturdy canvas lining provides body support and covers rivets. Drop forged D-rings are mounted in steel safety clips riveted through main belt. Plier pockets and tool snaps provide for holding additional tools. Made by **Mathias Klein & Sons**, 3200 W. Belmont Ave., Chicago 18, Ill.

▲ Mention Item NED-5768 when writing ▲

FIRE EXTINGUISHER

Particularly adaptable for use on trucks, automobiles, boats and airplanes, S.O.S. Fire Guard light-weight vaporizing-liquid fire extinguisher may be used on electrical, oil and gasoline fires effectively. Design assures immediate piston action even after long periods of disuse. Piston cannot stick to cylinder wall. Panic safety lock is operable by turning handle in either direction. Brass drop forgings are used for cap, stuffing box, handle lock and handle seal, eliminating all interior soldered joints. It will not leak, even when subjected to vibration or rough handling. Made by **General Detroit Corp.**, 2272 E. Jefferson Ave., Detroit 7, Mich.

▲ Mention Item NED-5769 when writing ▲

Careyclad Coating with Asbestos Fibre, protects roofing as well as exposed metal surfaces of steel tanks, bridges, heavy machinery, structural steel, etc. It is extremely durable, abrasion resistant and also resistant to acid, alkaline and salt atmospheric conditions. May be applied by brushing, dipping or by spraying if proper equipment is available.

On your next order, specify CAREY Coatings, Roof Cements and Flashing Cements for lower cost repairs and protection. Write Dept. 79.

THE PHILIP CAREY MFG. COMPANY
Dependable Products Since 1873 • Lockland, Cincinnati, Ohio

In Canada: The Philip Carey Co., Ltd. *Office and Factory:* Lennoxville, P. Q.

▲ Mention Item NED-5770 when writing ▲

AN *All-Electric* ADJUSTABLE-SPEED DRIVE FOR A-C. CIRCUITS
SPEED RANGES UP TO 16 TO 1
SIZES — 1 TO 30 hp.

RELIANCE VS DRIVE

1 DIRECT DRIVE. Lower cost, because fewer parts (no intermediate speed-changing device). Power is closer to where it is needed. Use less space. Streamline your machine design.

2 SPEED CONTROL CONVENIENCE WITHOUT LIMITATIONS. Place speed-changer and start-stop button at any convenient point to which a wire can be run. Control always within easy reach.

3 OPERATES ON A-C. POWER.

4 QUICK STOPPING.

5 SMOOTH, FAST ACCELERATION.

6 REVERSING.

7 SPEED-SETTING.

8 SLOW FOR THREADING and INCHING.

Get Reliance Bulletin 311 for details — and other advantages.

RELIANCE ELECTRIC & ENGINEERING CO.
1088 IVANHOE ROAD • CLEVELAND, OHIO
Sales Offices in Principal Cities

▲ Mention Item NED-5771 when writing ▲

Save Costly Tie-Ups of Large Production Units with this LOW-COST, VERSATILE SAW

WELLS No. 8

SPECIFICATIONS WELLS No. 8

CAPACITY: Rectangular	8" x 16"
(Special Guides)	5" x 24"
ROUNDS:	8" diameter
MOTOR:	½ H. P. current optional
SPEEDS:	Selective 60, 90, 130 ft. per min.
WEIGHT:	Approximately 750 lbs.

You can avoid costly tie-ups of large, special production units in your plant by using a Wells No. 8 Band Saw for odd metal-cutting jobs. It can be used on production . . . in stores or tool rooms . . . or on maintenance work.

The Wells No. 8 with 3-speed selection insures efficient operation. Gravity feed and automatic shut-off allows one man to operate 2 or more Wells Band Saws.

Low first cost, installation and power cost. Simple, rugged construction insures long life—minimum upkeep.

See your distributor or write direct for complete details on this versatile, low-cost metal-cutting band saw.

Wells saws

Products by Wells are Practical

METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1313 HARDING ST., THREE RIVERS, MICHIGAN

▲ Mention Item NED-5772 when writing ▲

LIFT MACHINERY

THE SAFE, EASY, ONE-MAN, *Porto-Power* WAY

For fast re-conversion—get set now to lift, move, and align machinery the new, safe way. Toe-lift attachments adapt the all-directional hydraulic PORTO-POWER ram to raising heavy loads off floor. Eliminates dangerous, time-taking crowbar methods.

Porto-Power Does '1001' Other Jobs

The same equipment used in lifting machinery, also pulls gears, straightens shafts, clamps parts for welding, presses parts together and can be adapted to pipe bending. Ask your Blackhawk Industrial Distributor—or mail the coupon.

BLACKHAWK MFG. CO., Dept. P14104, MILWAUKEE 1, WIS.

Mail details on PORTO-POWER and other Blackhawk Products

Blackhawk Mfg. Co., Dept. P14104, Milwaukee 1, Wis.
Rush details on all-purpose hydraulic Porto-Power.

Name_____
Firm_____
Address_____ City_____ State_____

▲ Mention Item NED-5773 when writing ▲

For Quality
"Industrial"
CUT GEARS-CUT RACKS
CUT SPROCKETS
and Dependability

Our large modern plant, fully equipped and in mass production can supply your requirements for Gears, Sprockets and Racks, in every particular.

You'll like our methods and our service. We also do precision surface grinding and can offer you time on our machines operating day and night.

Fastest Growing Gear Plant in the Middle West.

ARMY E NAVY

INDUSTRIAL GEAR MFG. CO.
4541 VAN BUREN STREET CHICAGO 24, ILLINOIS

▲ Mention Item NED-5775 when writing ▲

Now Also Available in
NEW LIGHT DUTY STYLE

All-Neoprene Latex
INDUSTRIAL
GLOVES

Impermeable to practically All Acids and Caustics

Highly Resistant to Oils and Greases

5 POPULAR STYLES

★ No. 5760-5, 18" LONG
EXTRA LONG GAUNTLET
GAUGE .030 TO .040
SIZES 10, 11

★ No. 5737-2, 14" LONG
LONG GAUNTLET
GAUGE .030 TO .040
SIZES 9-10-11-11½-12

★ No. 5705-5, 11" LONG
SHORT GAUNTLET
GAUGE .020 TO .025
SIZES 9-10-11

★ No. 5703-5, 10½" LONG
STANDARD DUTY
GAUGE .015
SIZES 7-8-9-10-11

★ No. 5702-5, 10½" LONG
LIGHT DUTY
GAUGE .010 TO .012
SIZES 7-8-9-10-11

REQUEST SAMPLES AND PRICES

SEIBERLING LATEX PRODUCTS CO.
AKRON, OHIO
354 - 4th Ave., New York City Merchandise Mart, Chicago

▲ Mention Item NED-5776 when writing ▲

KEEP YOUR EYE ON
THESE TWO PLASTICS

Synthane molded-laminated and molded-macerated are two forms of technical plastics that may do a better job for you in tomorrow's competitive market. The base materials are the same as those used in fabric grades of Synthane laminated, therefore much stronger than ordinary powder moldings.

Synthane molded-laminated and molded-macerated products require little or no machining and are economical where quantities involved warrant the cost of molds.

Consider Synthane molded-laminated and molded-macerated as well as Synthane sheets, rods and tubes in your planning. Send for the informative Synthane catalog today.

SYNTHANE
TECHNICAL PLASTICS

SHEETS • RODS
TUBES • FABRICATED
PARTS • MOLDED-
LAMINATED • MOLDED-
MACERATED

SYNTHANE CORPORATION,
Northeast River Road, Oaks, Penna.
Please send me a copy of the complete Synthane Plastics Catalog.

*Name*_____
*Name of Company*_____
*Title*_____
*Address*_____
*City*_____ *State*_____

▲ Mention Item NED-5777 when writing ▲

PNEUMATIC SAW GUIDE

Especially adaptable for capping of piling in construction work on docks, wharves, bulkheads, safety rails and fencing, this guide attachment for pneumatic saws assures uniform, level cuts within tolerance of battens. It consists of two lengths of pipe or bar stock secured beneath unit which act as guide runner on battens.

Illustration shows saw in use for cutting section of piling which is to be capped. This method is applicable to any construction problem where piling or posts must be cut accurately and level to take beams. Compact design permits saw to operate between piling spacing of as little as 21 inches. Made by **Davey Compressor Co., Kent, O.**

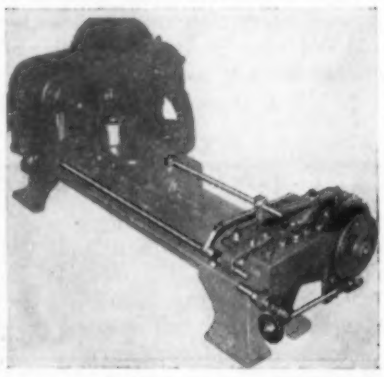
▲ Mention Item NED-5778 when writing ▲

RUST INHIBITOR

Protection of metal parts and equipment during storage, shipment and in some cases, in service is effected with Witco No. 673 rust inhibitor. This cold-dip, rapid drying coating may be applied either by dipping or spraying and it has consistency similar to that of water. It is non-abrasive, non-corrosive and easily removed with ordinary solvents. Melting point is in excess of 250 degrees Fahr. and coating remains flexible at temperatures of minus 20 degrees Fahr. Made by **Witco Chemical Co.,** 295 Madison Ave., New York 17, N. Y.

▲ Mention Item NED-5779 when writing ▲

AUTOMATIC LATHE OPERATOR



Hand-operated turret-equipped bench lathes are convertible into automatics by this Automat attachment which actuates cross slide, bed turret and chuck. Its use eliminates all manual operations except set-ups and cutting tool replacements. Standard set of cams will handle almost any job.

Member which actuates cross slide is torque rod which cushions shock of forming and cut-off operations. It assures uniform feed, accurate repeating and maximum tool life. Automatic cut-out is quickly adjustable to work of different character and minimizes tool spoilage or work rejection. Three-way Schrader valve provides for control of any pneumatic collet closer or chuck.

Installation is made easily on South Bend, Logan, Atlas, Craftsman, Sheldon, Clausing and similar bench lathes. It is especially adaptable for production runs as low as 500 pieces. List price is less than $300. Made by **Newton Mfg. Co.,** 706 N. Heliotrope Dr., Los Angeles 27, Calif.

▲ Mention Item NED-5780 when writing ▲

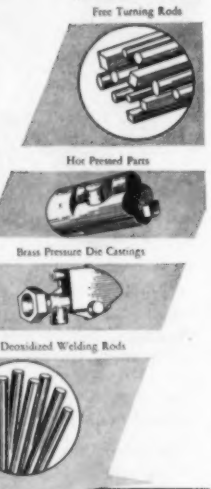
Titan
formulated
BRASS PRODUCTS
★ ★ ★

Production Insurance
That Costs You Nothing

★Where uniformity, quality and finish are considerations, you can avoid speculation and production hazards by adopting TITAN

- Free-Turning Rods
- Hot-Pressed Parts
- Pressure-Die Castings
- Double Deoxidized Welding Rods

These brass and bronze products are as perfect as modern metallurgy can make them.



TITAN METAL MANUFACTURING CO.
BELLEFONTE, PENNA.
New York • Chicago • San Francisco
A Great Name in Brass and Bronze Since 1915

▲ Mention Item NED-5781 when writing ▲

The speed and sustained accuracy of Logan Lathes results from exacting care in every detail of construction. All individual parts and all sub-assemblies are thoroughly tested as they are manufactured. In final inspection, a point-by-point check of the entire machine assures a completed assembly ready for production service. Such rigorous checking throughout strictly controls the consistent accuracy and quality of every Logan Lathe. Write for latest catalog.

Logan
LOGAN ENGINEERING CO.
CHICAGO 30, ILLINOIS
A Name To Remember When You Think of Lathes

▲ Mention Item NED-5782 when writing ▲

POSITIVE TOOL BIT RIGIDITY
WITH THE NEW
Clark ADJUSTABLE
TOOL
HOLDER

Higher Machine Speeds, Faster Feeds, and Deeper Cuts!

Vise-grip jaw exerts pressure over full length of cutter channel... not just at one point... to hold four or more sizes of round or square tool bits... without sagging or breaking... *at higher speeds, with heavier feeds.*

With equal rigidity, the screw-operated jaw clamps large, heavy bits or short stub bits... under size or out of round bits... dual narrow tool bits for cutting-off or special forming operations... carbide bits and boring bars and bits of brittle alloys. With this new Clark Tool Holder, the operator has an unobstructed view of the cutting edge, for better work control.

SPECIFICATIONS
LEFT OR RIGHT HAND MODELS

With 15° Cutter Channel		With Parallel Cutter Channel	
Model 60 (Size 0)	Takes 1/8 to 5/16 tool	Model P60 (Size 0)	Takes 1/8 to 5/16 tool
Model 61 (Size 1)	Takes 3/16 to 3/8 tool	Model P61 (Size 1)	Takes 3/16 to 3/8 tool
Model 62 (Size 2)	Takes 1/4 to 1/2 tool	Model P62 (Size 2)	Takes 1/4 to 1/2 tool
Model 64 (Size 4)	Takes 5/16 to 5/8 tool	Model P64 (Size 4)	Takes 5/16 to 5/8 tool

Write for Complete Catalog

CLARK CUTTERS
Robert H. Clark Company
Industrial District, BEVERLY HILLS, CALIF.
ADJUSTABLE CUTTING TOOLS FOR ALL MATERIALS

▲ Mention Item NED-5783 when writing ▲

FOR LOW-TEMPERATURE TESTING AND CONDITIONING

Sub-Zero Cabinet

AMINCO

(Dry Ice Cooled)

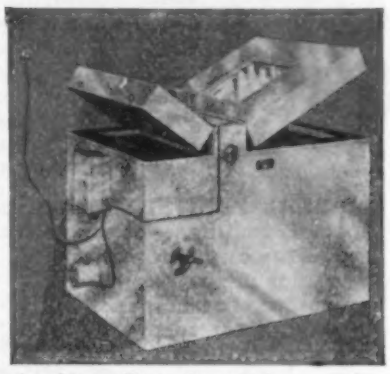
Minus 120° to Plus 220° F.

Constancy: ±½° F.

For testing instruments, aircraft equipment, and many materials to determine their performance, durability, etc. at low temperatures.

For chilling metals and metal parts to produce desired characteristics, such as chilling aluminum rivets to retard age hardening and make them soft enough to permit easy driving; also chilling parts for expansion fitting, etc.

Ideal as a food-freezing pilot plant.



Write for Your Free Copy of "Some Applications of Sub-Zero Temperatures to Steel and Non-ferrous Materials"

A comprehensive survey of the major industrial and research applications of low temperatures

AMERICAN INSTRUMENT CO.
8010 GEORGIA AVENUE · SILVER SPRING, MARYLAND

▲ Mention Item NED-5784 when writing ▲

Merrill Brothers
NEW DROP FORGED

VOLZ PLATE—LIFTING CLAMPS

NOW GIVE YOU MORE!
- STRONGER HOLD!
- GREATER LIFTING POWER!
- QUICK RELEASE!

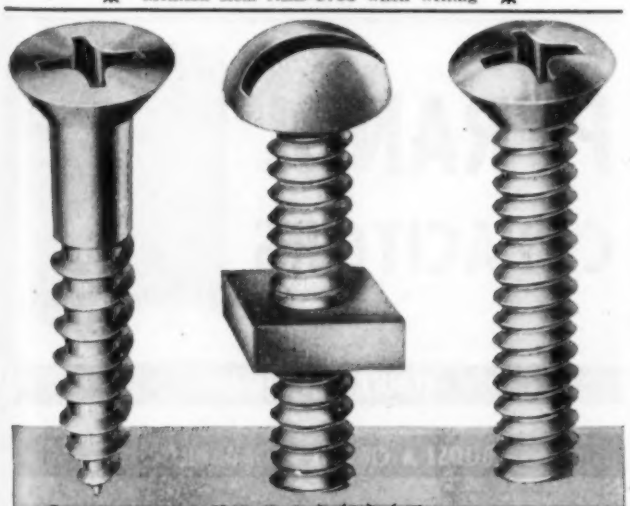
An Important Development for:
- "Come-Alongs" on Welded Assemblies
- Lifting Oil and Ash Barrels and other Metal Barrels or Box Containers
- Lifting Large Stamped Tank Heads or Tops

More of everything you need—plus greater plate handling range, from 0" thickness up. Especially suited for angles and structural assemblies. Drop forged completely in ½-ton, 1-ton and 3-ton capacities.

Bulletin and Prices on Request

MERRILL BROTHERS
38-07 Arnold Avenue
Maspeth, New York

▲ Mention Item NED-5785 when writing ▲



Engineered **HOLTITE** *Fastenings*

Produced in great quantities with the uniform precision of small tools, HOLTITE Engineered Fastenings are gaged and inspected to strict standards of accuracy throughout each stage of production. Furnished with HOLTITE-Phillips Recessed Heads or with slotted heads, these rugged fastenings meet the strictest requirements for ANY application in ANY material.

Special parts and fastenings made exact to specifications or blueprints. Our Engineering Staff will gladly study your fastening problems and recommend economical solutions.

CONTINENTAL SCREW CO.
New Bedford, Mass., U.S.A.
BUY MORE BONDS

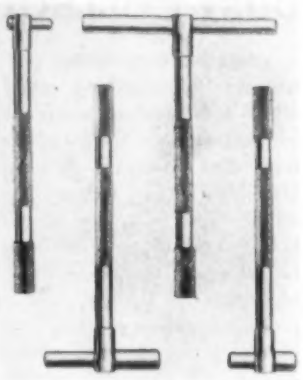
▲ Mention Item NED-5786 when writing ▲

TURRET DRILL PRESS HEAD

Three different sizes of drills or other tools may be used in sequence on single drill press by means of this multiple tool turret head. Production operations are claimed to be speeded with this attachment which has ¼-inch Jacobs chucks as standard on each spindle. Sufficient clearance is provided for most jigs and fixtures. Positive indexing is afforded and only spindle lined up with drill press spindle is driven. Made by **Universal Engineering Co.**, 2230 National Ave., San Diego 2, Calif.

▲ Mention Item NED-5787 when writing ▲

TELESCOPING GAGES



Furnished in complete sets packed in leatherette case, this line of telescoping gages consists of four sizes of 5/16 to ½ inch, ½ to ¾ inch, ¾ to 1¼ inches and 1¼ to 2⅛ inches. Sets consist of either three or four of these precision tools. Each gage is hardened and ground to proper radius. Tools are easily operated. Made by **Brand Tool & Supply Co.**, 500 W. Washington Blvd., Los Angeles 15, Calif.

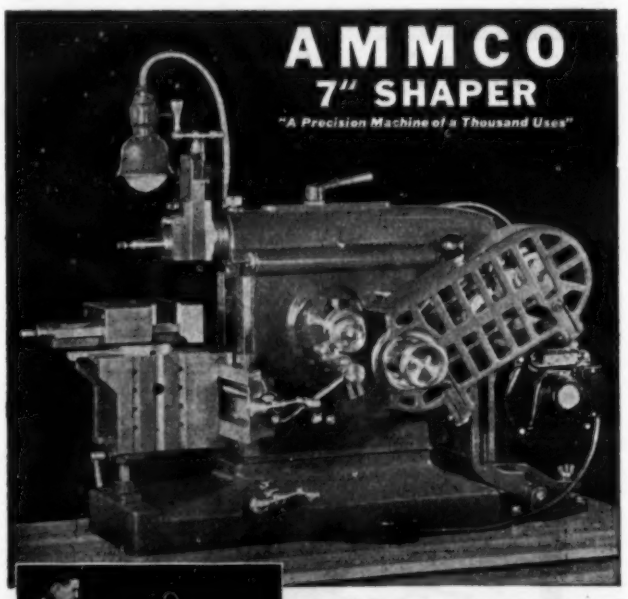
▲ Mention Item NED-5788 when writing ▲

OIL TRANSFER UNIT

Providing heat transfer oil to machines which require elevated temperature, Model S-12 automatic oil circulating and heating unit employs 12.8 kilowatt electric heating elements around tanks which have capacity of 12 gallons. Three thermostats, each of which is independently adjustable to a desired temperature, are controlled by simple selector switch which enables selection of any desired thermostatically controlled temperature.

Heated oil is circulated by rotary pump driven by ½-horsepower motor. Pump is so located that any leakage from stuffing box returns to main circulating oil pool. If unit is required for circulating purposes only, selector switch enables pump to be operated without heating elements being used. Temperature range may be any one of three temperatures preselected between 200 and 500 degrees Fahr. Made by **Youngstown Miller Co.**, 1638 Hayes Ave., Sandusky, Ohio.

▲ Mention Item NED-5789 when writing ▲



AMMCO 7" SHAPER
"A Precision Machine of a Thousand Uses"

IT'S PORTABLE
--Saves Steps and Time--

Don't tie up a big shaper when so many jobs can be done just as accurately and much quicker and more economically on the AMMCO 7" PRECISION SHAPER.

Available for stationary installation or mounted on portable cabinet easily rolled to the mechanic's workbench ... Write today for specifications and prices.

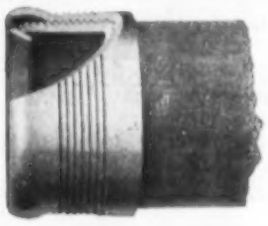
AUTOMOTIVE MAINTENANCE MACHINERY CO.
2110 Commonwealth Avenue North Chicago, Ill.

▲ Mention Item NED-5790 when writing ▲

Does your product have vital threaded parts that need protection—*use* **WEDGE** THREAD PROTECTORS

Split Feature Patented.

There are many products that are almost a total loss if the threaded parts become damaged in handling, storing or shipping. Many are using WEDGE Thread Protectors to prevent damage to vital parts. Write today for circular.



Patent No. 2,156,169

for STRONGER Welded pipe joints *Use* **WEDGE** *Split* CHILL RINGS

The STRONGER the pipe joints the less chance of costly breaks. WEDGE Chill Rings with the patented SPLIT Feature assures strong welded joints. In case of shock, strain or vibration the reinforced joints won't leak or break. Write.

WEDGE PROTECTORS, INC.
9528 RICHMOND AVE. CLEVELAND 5, OHIO

Use WEDGE Chill Rings-Thread Protectors

▲ Mention Item NED-5791 when writing ▲

a Breather

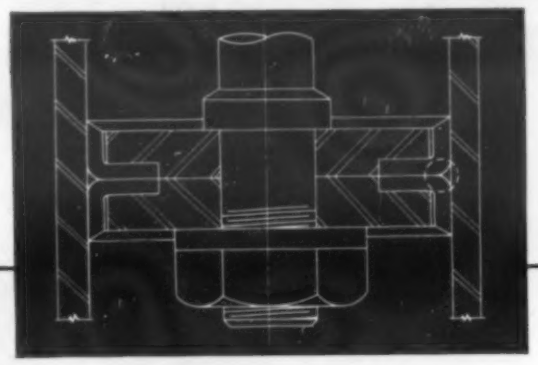
FOR HOT PLANES AND MEN

Heat — 140 degrees, and more — maintenance crews in plane interiors, oven hot. Portable ventilating units, powered by gasoline engines, bring relief — draw hot air out, or shoot cool air in — one more war job for dependable Briggs & Stratton 4-cycle air-cooled gasoline engines.

Air-Cooled Power 4 CYCLE BRIGGS & STRATTON GASOLINE ENGINES

During 25 years of *continuous* production Briggs & Stratton has built more than 2,000,000 air-cooled 4-cycle gasoline engines. We are well started on the 3rd million. Trouble-free performance, easy starting and economy have made Briggs & Stratton leaders in the field — and "preferred power" everywhere. BRIGGS & STRATTON CORP., Milwaukee 1, Wis., U.S.A.

▲ Mention Item NED-5792 when writing ▲



DON'T LET THIS HAPPEN TO YOU!

If you were on the list to receive Graton & Knight "Packings Pointers" regularly, you'd know what's wrong in this picture.*

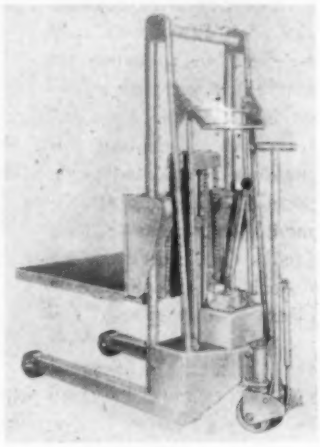
"Packings Pointers", giving you authentic information on proper packings design and application, are issued every other month. They are free. Ask Graton & Knight's Packings Department to put you on the list. Address 325 Franklin St., Worcester 4, Mass.

*Cup packings should never be installed back to back without a backing plate between them.

GRATON & KNIGHT COMPANY
WORCESTER 4 GRATON AND KNIGHT MASSACHUSETTS

▲ Mention Item NED-5793 when writing ▲

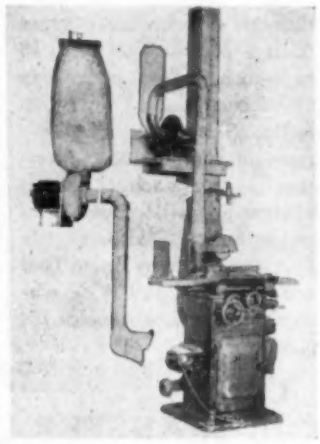
LIFT-TIERING TRUCK



Departing from conventional design, this Hydraulic High-Lift truck is combination lift truck and tiering machine. Weighing only 495 pounds, it is easily maneuvered and handled. It turns within its own length. Tubular and formed steel construction is used and Timken bearings are used throughout. Finger-tip controlled lowering device and floor lock facilitate operation. Capacity is 1000 pounds with 24 x 30-inch platform which can be raised from 6 inches to 48 inches above floor. It can be supplied to meet other specifications. Made by Lyon-Raymond Corp., 1613 Madison St., Greene, N. Y.

▲ Mention Item NED-5795 when writing ▲

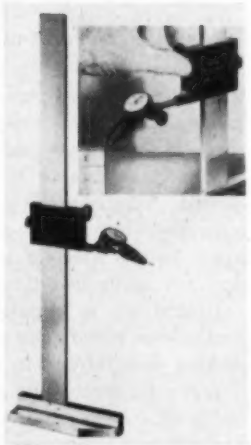
DUST COLLECTOR



Adaptable to grinding, polishing, woodworking and other dust creating machines or operations, this suction type dust collector handles 600 cubic feet of free air per minute and is driven by ¼-horsepower motor which may be plugged into any lighting outlet. Use of 3-inch pipe and elbows permits unit to be attached to machine dust hood. Powerful suction removes dust-laden air and dirt is collected in large dust bag. Cleaned air is returned to working space, thus minimizing heat loss from plant. Made by Leiman Bros., 133-75 Christie St., Newark 5, N. J.

▲ Mention Item NED-5796 when writing ▲

DIAL TYPE HEIGHT GAGE



Precision measurement is simplified through use of this model 1492 height gage which features fine adjustment of indicator bracket and use of dial type Testmaster indicator. Bracket can be set at any height on upright and final adjustment used to raise or lower indicator point a distance equal to full range of indicator which is 0.030 inch. Dovetail slides and universal clamp permit setting of indicator in any position. Indicator swivel point is chromium plated and swivels full 180 degrees. Slide brake prevents dropping of bracket when locking screw is loosened. Maximum height capacity is 18 inches. Made by Federal Products Corp., 1144 Eddy St., Providence 1, R. I.

▲ Mention Item NED-5797 when writing ▲

AND THE MARKS STAY ON!
"Reddy" Markal

All-important identifying marks made with MARKAL PAINTSTIKS won't come off—unless you take them off. Sun, rain, cold, sleet, snow—no weather condition can destroy them. Besides, MARKAL PAINTSTIKS penetrate wet, moisture-frozen, or oily surfaces—they mark right through them.

MARKAL PAINTSTIKS are made of special weather-resistant paint. The marks are clear, distinct, positive—not messy like the old paint bucket and brush method. Your records are safe and permanent when you "Mark with Markal".

Choice of Colors
Made for all hot and cold surfaces
A Specific Type MARKAL PAINTSTIK for Every Marking Job

WRITE FOR SAMPLES AND LITERATURE

MARKAL CO. 621 N. Western Ave. Chicago 12, Ill.
"Originators of Paint Sticks"

▲ Mention Item NED-5799 when writing ▲

"Aero-Seal" HOSE CLAMPS

Distinctive worm gear tightening action provides powerful belt-like pull-up. Uniform pressure all around prevents leaks. Can be put on or taken off hose in place on pipe. Can be re-used. No loose parts. Compact design. Extremely long take-up. Made in sizes from ½" up. *Write for circular.*

Proved outstandingly reliable in severe service on aircraft fuel, oil, and coolant lines.

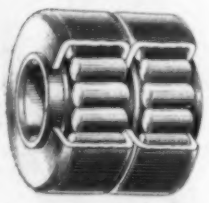
AIRCRAFT Standard PARTS CO.

Aircraft Standard Parts Co.
1753K NINETEENTH AVE., ROCKFORD, ILL.

▲ Mention Item NED-5800 when writing ▲

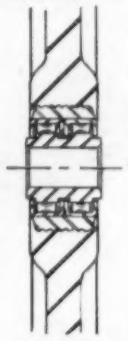
To Reduce Weight Use Needle Bearings

TYPE DC



TYPE PN (*Double Row*)

In portable tools like the Power Tool Angle Head shown here, the application of DC Needle Bearings illustrates how its small compact design permits overall size and weight reduction.



Full advantages of anti-friction operation with resultant weight savings in aircraft pulleys is obtained through Needle Bearings. X-section shows the doublerow PN Type.

In applications where weight and space are at a premium, the use of Needle Bearings has been widely adopted as the ideal solution to many design problems. For the Needle Bearing's full complement of small diameter rollers held within a compact retaining raceway provides a unit which is extremely *light* in relation to its high load capacity. Furthermore, the small overall size of the Needle Bearing enables the design engineer to reduce size and weight of the bearing housing and frequently of other component parts as well—without sacrifice of strength, efficiency, or performance.

And in many applications the resultant weight savings contribute directly to greater operating efficiency and economy, increased sales appeal, or savings in packing and shipping costs.

In your own work toward the elimination of excess or unnecessary weight, investigate the advantages offered by Torrington Needle Bearings. The possibilities offered may surprise you. Our engineering department will gladly render every assistance in laying out applications to secure the full advantages of Needle Bearings in any design job. Or if you wish more preliminary information write for a copy of the Torrington Needle Bearing Catalog No. 30-A.

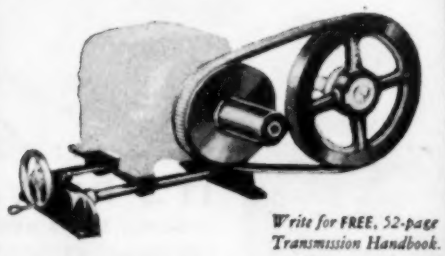
THE TORRINGTON COMPANY
TORRINGTON, CONN.
THE TORRINGTON CO., BANTAM BEARINGS DIVISION
SOUTH BEND 21, IND.
"Makers of Needle Bearings and Needle Bearing Rollers"
New York Boston Philadelphia Detroit
Cleveland Seattle Chicago San Francisco
Los Angeles Toronto London, England

▲ Mention Item NED-5794 when writing ▲

Right Speed For Each Job!

IDEAL VARIABLE *Speed*

Gives your machines a wide range-of-speeds up to 3 to 1 ratio—to suit different jobs, different workers, different materials. Easy to install. Sizes up to 8 H. P. Inexpensive.



Write for FREE, *52-page Transmission Handbook.*

IDEAL *Sycamore*
IDEAL COMMUTATOR DRESSER CO.
1032 Park Ave. Sycamore, Ill.
Sales Offices in all Principal Cities.
In Canada: Irving Smith Ltd., Montreal, Quebec.

▲ Mention Item NED-5798 when writing ▲

PYRANOL CAPACITORS

REDUCE KVA DEMAND

BOOST A CIRCUIT'S LOADABILITY

IMPROVE VOLTAGE AND EQUIPMENT PERFORMANCE

REDUCE POWER COSTS
if your power contract contains a power-factor or kva-demand clause

SAVE MATERIALS

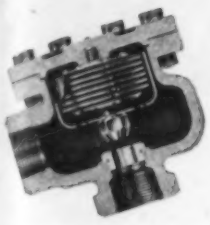
Write for Bulletin GEA-77 for the complete story of how it may be possible to gain any or all of these benefits in your plant. *General Electric Company, Schenectady 5, N. Y.*

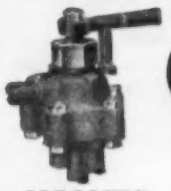
GENERAL ELECTRIC

▲ Mention Item NED-5801 when writing ▲

For Efficient Operation and Long Life, Specify

NICHOLSON





TRAPS

NICHOLSON STEAM TRAPS have the largest water and air discharging capacity of any trap in their price range. Cannot freeze, water-log or air-bind; intermittent discharge; same size valve orifice for all pressures. Sent on trial. Catalog No. 444 on request.

VALVES

NICHOLSON CONTROL VALVES are made in two, three, four-way, multi-port, metering, distributing and special types. For air, steam, oil, gas, tar or water. Also lever, foot, solenoid and motor operated types. Hydraulic pressures up to 5000 lbs. Catalog No. 543.

★

FLOATS

NICHOLSON WELDED FLOATS are made of stainless steel or chromium plated steel; spherical, cylindrical and elliptical shapes; sizes 2" to 14" diameter; with threaded female spud or tube through center. For pressures to 2000 lbs. Bulletin No. 339.

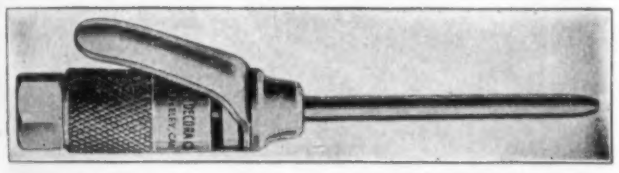
OTHER NICHOLSON PRODUCTS: Piston and Weight-Operated Steam Traps; Compressed Air and Gasoline Traps; Flexible and Compression Shaft Couplings; Expanding Mandrels; Arbor Presses; Steam Eliminators and Separators

W. H. NICHOLSON & CO.

162 OREGON ST., WILKES-BARRE, PA.

▲ Mention Item NED-5802 when writing ▲

DECORA
AIR DUSTER-BLOW GUN
A RITEX PRODUCT



Two orifice sizes, ⅛" or ¼"

$1.00

AS modern and efficient as the thousands of up-to-date American shops in which it serves! Indispensable for instantly cleaning machinery or removing moisture, grit, chips and filings. Its long, slender snout gets down into the cracks. Sure-grip, lever-type trigger gives graduated air volume control, also acts as hanging hook. Few parts, all quickly replaceable. Built for long wear in constant use. Prompt deliveries on War Production Board AA priorities. *{Distributorships open in several areas}*

See your DECORA Dealer or write

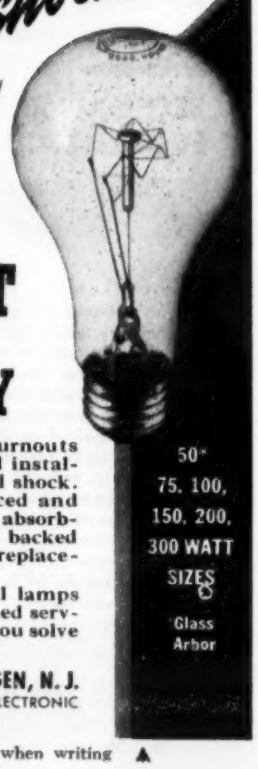
DECORA MANUFACTURING CO., Inc.

Factory Office: 1819 FIFTH STREET, BERKELEY 2, CALIFORNIA

Chicago Distributor: W. I. Martin & Co., 711 S. Dearborn St.

▲ Mention Item NED-5803 when writing ▲

Built to withstand shock or vibration



DURO TEST
2,000 HOUR
EXTRA DUTY

These rugged lamps reduce burnouts on extension cord service and installations subject to mechanical shock. The filament is firmly braced and sawtooth-mounted on shock absorbing spring steel arbor. Fully backed by Duro Test one year free replacement guarantee.

Complete line of industrial lamps sold in your area by our trained service representatives who help you solve your lighting problems.

50* 75, 100, 150, 200, 300 WATT SIZES

*Glass Arbor

DURO TEST CORP., NORTH BERGEN, N. J.

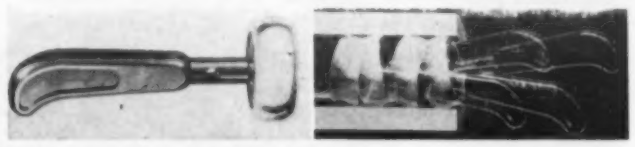
INCANDESCENT • FLUORESCENT • ELECTRONIC

SEND FOR CATALOG 44D

▲ Mention Item NED-5804 when writing ▲

FIXED LIMIT TYPE GAGE

Simplicity, ease of operation, accuracy and gaging speed are claimed features of line of TeBo fixed limit type gages which are now produced by this company as exclusive licensee



in the Americas. Gaging head is section of sphere and has protective plating of hard chromium to assure maximum life. Shape of head contributes to frictionless operation, as well as easy insertion and withdrawal when checking bores. Gage cannot jam. Small projection on periphery of head may be adjusted to limit maximum tolerance or to compensate for wear.

Handle is balanced to weight of head. Position of handle, as well as feel of gage indicates condition of bore. Production increases of as much as 60 per cent are claimed to be possible as compared with usual methods. Made by **Standard Gage Co.**, 200 Parker Ave., Poughkeepsie, N. Y.

▲ Mention Item NED-5805 when writing ▲

LOUD SPEAKER

Of compact multicellular design, this speaker combines both high and low frequency units and is particularly adaptable for paging and public address systems. Occupying less than 1½ cubic feet of space, this unit is claimed to cover area 12 times greater than that of single unit speakers now available. This permits use of fewer speakers in system, and affords pitch, quality, clarity, volume and coverage from 500 to 1200 per cent over systems now in use. Made by **Altec Lansing Corp.**, 1210 Taft Bldg., Hollywood 28, Calif.

▲ Mention Item NED-5806 when writing ▲

DO YOU KNOW?

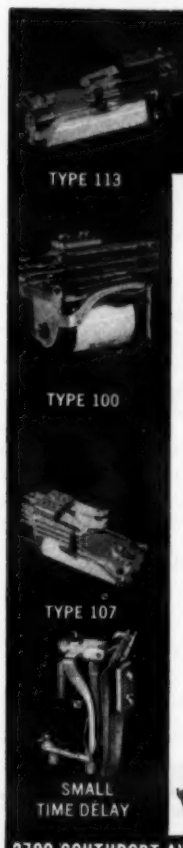
Savings of up to 50 per cent in man hours are possible through development of method for clean-stripping Formex coating from fine size wire. Chemicals, combined with heat of less than 500 degrees Fahr. as accelerating factor, are used. Process is not harmful to operator and properties of wire remain unchanged. Developed by Fairchild Camera & Instrument Corp., 475 Tenth Ave., New York 18, N. Y.

▲ Mention Item NED-5807 when writing ▲

Paper plastic material is being used to manufacture barrels of flying bazookas installed on Thunderbolt and other types of fighter planes. Walls of barrels are about ¼ inch thick and plastic will withstand fiery blast of rocket missile when it is fired. Developed by General Electric Co., Plastics Div., 1 Plastics Ave., Pittsfield, Mass.

▲ Mention Item NED-5808 when writing ▲

When You Need RELAYS--



Whether your requirements are for a standard type relay or a special relay for an unusual application, you can rely on Cook engineering to give you those "plus" features that make all Cook relays "extra-ordinary."

Here are some facts about Cook relays for you to consider when planning your relay requirements.

- Carefully designed to the high standards of Cook engineering.
- Tooled and fabricated completely under one roof.
- Precision manufactured with modern equipment.
- Assembled and tested with exacting care by skilled workers.
- Highest grades of all materials are used in all parts of Cook relays.
- Manufactured in a model plant with efficiency that provides capacity to produce in quantity.

COOK ELECTRIC Company

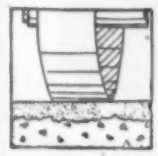
2700 SOUTHPORT AVE. CHICAGO 14, ILLINOIS

▲ Mention Item NED-5809 when writing ▲

Use "PERMAFLEX"
Resurface and Patch INDUSTRIAL FLOORS

Bonds Perfectly—Never Comes Loose
No Chipping Required

Install directly over your old concrete, wood, brick or stone floors, walks or drives—Interior or Exterior.



"PERMAFLEX" Resurfaced Areas will not rut under 3,000 lbs. per sq. in.

HEAVY DUTY DUSTPROOF
WATERPROOF SLIPPROOF
QUIET SANITARY RESTFUL

Many users apply "Permaflex" over new concrete to prevent wearing away of the concrete under truck wheels and thus preserve structural strength.

OLD MASTICS RUT and DENT under 200 lbs. per square inch.

The most severe trucking conditions in 400 of the largest industrial plants show no destructive effect on "Permaflex" after many months use.

Every conceivable trucking condition was fully met.

AMAZING! UNBELIEVABLE! until you try "PERMAFLEX"

Users include U. S. Steel, Bethlehem, Republic, General Motors, A. O. Smith, Western Electric and leading Railroads.

TEST 100 SQ. FT.—BE CONVINCED

Send for literature and trial offer.

INSTALL COMPLETE 12½c per square foot

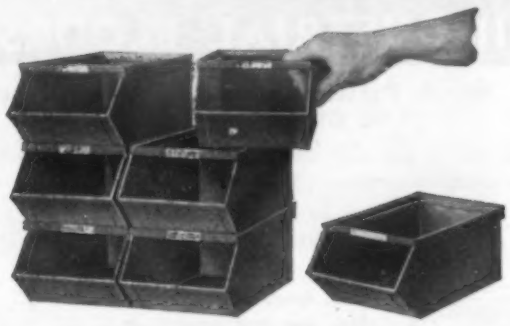
PERMAFLEX PRODUCTS COMPANY

1848 North Front Street Philadelphia, Pa.

▲ Mention Item NED-5810 when writing ▲

▲ Mention Item NED-5811 when writing ▲

We have been given permission by WPB to manufacture Stackbins to be used as portable containers for production and assembly.



Save Time and Labor Handling Parts and Materials

Patented *Stackbins* keep parts and materials instantly accessible—eliminate waste hand motions—stack rigidly to form units of exactly the right shape and capacity at the point of assembly—save time and labor handling parts and materials.

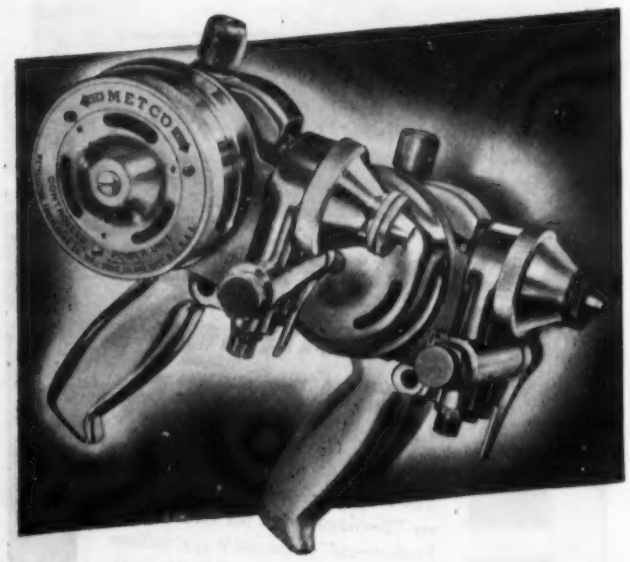
Write today for full details and prices on all-welded steel *Stackbins*. Stackbin Corp., 71 Troy St., Providence, R. I.

STACKBINS
"STACKED AND STILL ACCESSIBLE"

▲ Mention Item NED-5813 when writing ▲

Time and Money Savers

IN MAINTENANCE AND PRODUCTION



PUT A METCO Metallizing Gun in your maintenance department . . . it will salvage worn parts of any size right on the spot, and generally at a fraction of replacement costs! Install a METCO on your production line . . . it will rapidly apply any wear- or corrosion-resistant surface, to any base; avoid wasteful solid construction from superior metals! Choose Type E, Type 2E, or the new Type 3E . . . convert to either of the two later if you wish.

METCO
REG. U. S. PAT. OFF.

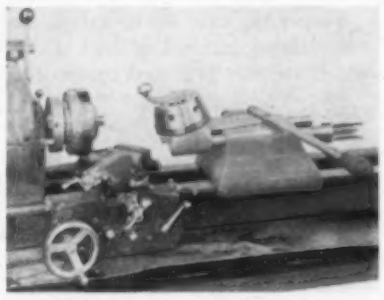
MAIL COUPON FOR COMPLETE DETAILS

METALLIZING ENGINEERING CO., INC.
38-24 30TH STREET, LONG ISLAND CITY 1, N.Y.
Send process and Equipment Catalogs 42B, 46.
Name _____
Title _____
Company _____
Address _____ NED 10-44

WORLD'S FINEST METALLIZING EQUIPMENT

▲ Mention Item NED-5814 when writing ▲

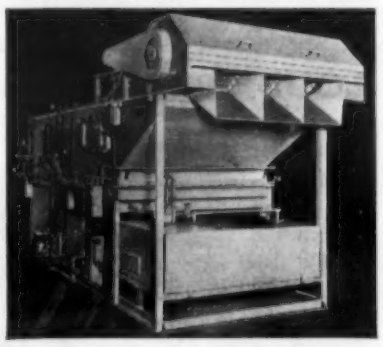
SELF-INDEXING BED TURRET



Made to fit lathes having up to 12-inch swing, this self-indexing bed turret permits production operations to be performed on Atlas, Craftsman, Logan, South Bend and other similar machines. It provides six-position indexing with simple lever action. Stops are provided for each position of 4½-inch head which has 4-inch travel. Unit is installed easily by removing regular tailstock and sliding turret in place. Holes are to be bored in head when installed to assure perfect alignment. Made by **Olmsted Mfg. Div.**, Southwestern Development Co., 511 S. Redondo Blvd., Inglewood, Calif.

▲ Mention Item NED-5815 when writing ▲

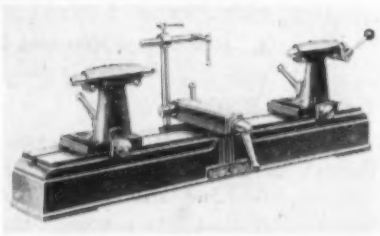
METAL CLEANING MACHINES



So constructed that they may be changed-over easily for normal peacetime manufacturing operations, Detrex degreasers and washers are production machines. Illustrated degreaser for cleaning small assorted parts has three divisions. Design of machine was coordinated to enable manufacturer, whose prewar business was in small automotive accessories, to install machine for cleaning of ammunition clips. No change in construction will be required when reconversion arrives. Company offers engineering service for modification of cleaning machines with minimum of expense and time. Offered by **Detrex Corp.** 13005 Hillview Ave., Detroit 27, Mich.

▲ Mention Item NED-5816 when writing ▲

PRECISION BENCH CENTER



Featuring universal type indicator support bracket, Delta-Milwaukee bench centers facilitate accurate inspection and testing operations. Indicator base can be quickly and securely locked in any position on bed by operating handle on front of device. Indicator holder can be placed in any vertical or horizontal position.

Heavy cast bed of unit is normalized to relieve strain. Top surface is flat and head and tail stocks can be reversed so that unit may be operated from either side. Pieces to be inspected are held between hardened and ground 60-degree angle centers. Maximum distance between centers is 19½ inches. Made by **The Delta Mfg. Co.**, 614 E. Vienna Ave., Milwaukee 1, Wis.

▲ Mention Item NED-5817 when writing ▲

P&H WELDING POSITIONERS

WELD FASTER, EASIER, AT LOWER COST!

Model WP-2—2500 lbs. Capacity

There are more big time-and-money-saving advantages in this new P&H WP-2 Welding Positioner than you would believe possible — at such surprisingly low cost.

The WP-2 is the most versatile positioner in its class — easiest to operate. Of all-welded steel construction with large table area and hydraulic power tilting — it is available with manual, hand-wheel or power turning. Has positive table locking device — telescopic elevation.

Write for Free Bulletin

. . . of facts and pictures giving complete story! Start now to save time, costs by positioning your work. It shows you how! Ask for Bulletin P2-1.

General Offices: 4537 West National Ave., Milwaukee 14, Wis.

HARNISCHFEGER CORPORATION
ARC WELDERS • EXCAVATORS • ELECTRIC CRANES P&H MOTORS • HOISTS • WELDING ELECTRODES

Canadian Distribution: The Canadian Fairbanks-Morse Co., Ltd.

▲ Mention Item NED-5818 when writing ▲

Sharp, Clear Impressions ON ALL METAL MARKING JOBS!

ANY METAL PART that requires a serial number, a catalog number, size identification—or any other type of marking—can be quickly and *clearly* marked with Mercury Steel Letters and Figures!

These Stamps are made of the finest carbon steel to protect against breakage and give you years of service on all part marking work. The letters or figures are deep cut with sharp faces for ease of stamping on even the hardest metals. Accurate bevel further assures clear impressions, and aids in alignment. The husky steel body is amply large to withstand severest use.

A large stock of Mercury Steel Letters and Figures in sets and sorts is available in sizes to meet a complete range of metal marking needs. Special sizes can be made to your specifications, if desired. *Write Dept. E for complete details, and briefly outline your marking problem for our recommendation on the Mercury Stamps to meet your needs!*

Metal Marking Tool Specialists for Over 25 Years

MERCURY METAL DIE AND LETTER CO.
SOUTH SAN PEDRO AT SIXTEENTH STREET • LOS ANGELES 15, CALIFORNIA

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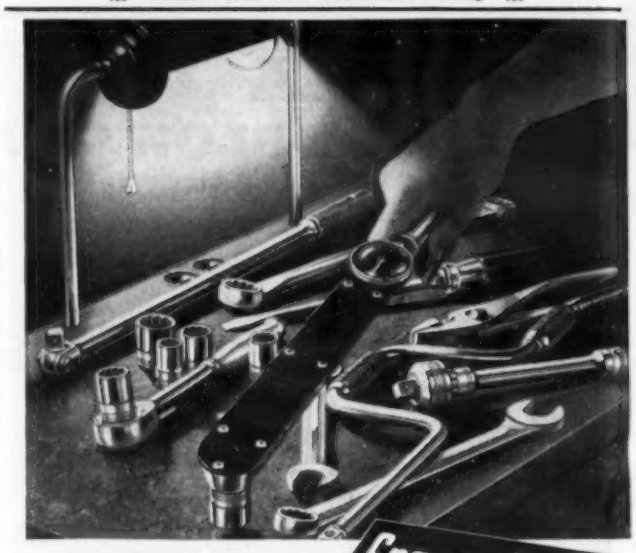


Snap-on Tools
THE CHOICE OF BETTER MECHANICS

For Every nut turning operation there is a Snap-on wrench engineered to do the job better, easier, with greater accuracy and safety. Standout for precision is the Snap-on Torqometer shown above . . . widely used wherever accurate bolt tension is essential. The worker sees the pressure as he turns the nut . . . as easily as reading a watch . . . and confidently tightens to the correct inch-pound or foot-pound.

Snap-on's 15 Torqometer sizes covers every tensioning requirement. New industrial uses, such as adjusting tension on bottle capping machines, power hack saws, etc., are continually developing. Write us your tensioning problems and our engineers will gladly advise on individual requirements.

SNAP-ON TOOLS CORPORATION, 8042-J 28th Ave., Kenosha, Wis.

▲ Mention Item NED-5820 when writing ▲

ARE YOUR REFERENCE FILES COMPLETE?

Not unless you have this new and complete catalog on **BECKMAN pH EQUIPMENT**

WITH pH control playing an increasingly vital role in so many production and processing operations—*wherever water or water solutions are used in plant operations*—you should have this helpful, informative pH catalogue in your files for quick reference . . .

- It lists and describes over 60 regular and special purpose pH electrodes for a wide range of industrial as well as laboratory pH work.
- It gives important facts about Beckman Laboratory, Industrial and Automatic pH instruments and accessories.

Whether you are now using pH control or are contemplating the installation of pH equipment, you will find this booklet a valuable reference guide to the latest developments and accessories for modern glass electrode pH control. Ask for Beckman Bulletin #86. Sent free as long as the limited supply lasts!

BECKMAN INSTRUMENTS
NATIONAL TECHNICAL LABORATORIES
South Pasadena • California

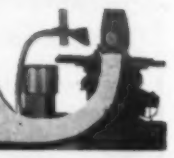
BECKMAN INSTRUMENTS CONTROL MODERN INDUSTRIES

▲ Mention Item NED-5821 when writing ▲

DUSTKOPS STOP DUST AT THE SOURCE

- PORTABLE
- LOW COST
- QUICKLY INSTALLED
- ENTIRELY SELF-CONTAINED

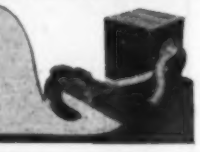
Dust from any surface grinder stops immediately with Model 950 Dustkop. Cyclone separator and filter clean and return air to working space.



Model 1250 Dustkop gets all the dust and most of the fumes from this heavy duty production abrasive cut-off.

Dustkop (Model 950) collects the dust from the tool grinder that is located too far from the rest of the centralized dust collecting system.

Model 600 (flat filter) needing only 1 sq. ft. bench space is an entirely self-contained dust collecting system in itself.



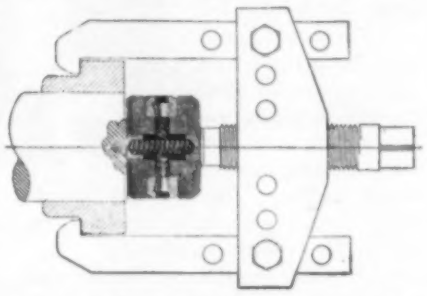
SEND *Now* FOR NEW CATALOG

AGET-DETROIT CO. 603 FIRST NATIONAL BLDG. ANN ARBOR, MICHIGAN TELEPHONE 2-5585

▲ Mention Item NED-5822 when writing ▲

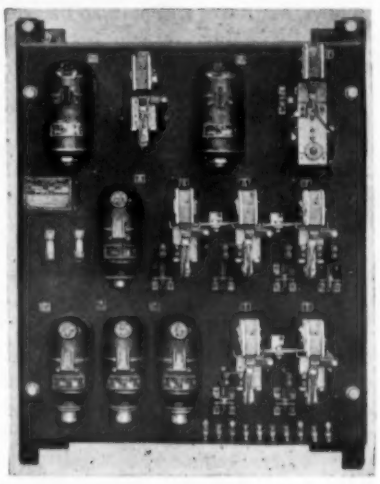
SHAFT PULLING PROTECTOR

Fitted with Timken roller thrust bearings, Keystone shaft protectors prevent damage to end of shafts when pulling tightly fitted gears, pulleys or fittings from armatures and other shafts. Device is placed between shaft end and screw stud of puller. Stationary plug is fitted with movable male center to locate device centrally on shaft. Rotating plug has moveable female center to adapt it to end of stud of puller. Rotating plug turns freely as pressure is applied and pinion is withdrawn without damage to shaft end or shaft center. Complete set of eight units in protective case includes sizes for all shafts ranging from 1 to 4 inches in diameter. Made by **Keystone Electric Co.**, 1220 Ridgely St., Baltimore 30, Md.



▲ Mention Item NED-5825 when writing ▲

CRANE CONTROLLERS



Offered in styles to meet requirements for any combination of motions on floor-operated direct current cranes, this line of standardized controllers features tilting type panels for easy access to rear wiring. Panels are compactly designed and resistors are mounted separately. Equipment may be mounted on crane girders and require minimum of collector-bars.

Pendant type station contains push buttons for all motions, indicating light, power failure and overload relay reset button. Double pole toggle switch for opening both sides of control circuit serves both panel and crane and is used for emergency stop as well as disconnect purposes. As alternate, rope-operated master switches may be supplied for each motion.

Hoist panels are of dynamic lowering type for cranes without mechanical load brakes and of reversing type for cranes having mechanical load brakes. Trolley and bridge panels are of reversing-plugging type. When bridge or trolley motion is equipped with electrically operated holding brake, panel is of reversing type and is available with drift point when shunt brake is used.

Main hoist has overload relays and low voltage protection features. Panels for other motions on crane obtain overload and low voltage protection from main hoist panel. This arrangement simplifies panel for these motions and standardizes them for wide range of horsepower sizes. Control circuit terminals are front connected. Cabinets with provision for padlock are available, when desired, in either general purpose or gasketed type. Made by **The Electric Controller & Mfg. Co.**, 2694 E. Seventy-ninth St., Cleveland 4, O.

▲ Mention Item NED-5826 when writing ▲

You'd Better SKIP LITTLE DRIP!

After time-tested, quality Fel-Pro Gaskets, Packings and other Sealing Materials are installed, there's no escape for wasteful, trouble-making "little drips" of Water, Oil, Steam, Chemicals.

In military service, in aircraft and other war industries, Fel-Pro products are meeting every possible sealing requirement. —And there's no shortage of Fel-Pro Sealing Materials; even those "drafted for the duration" have been successfully replaced by new, specially developed, improved Fel-Pro products.

Send today for FREE Fel-Pro Folder containing 36 actual samples of sealing materials, applications, engineering data, etc. Felt Products Mfg. Co. 1510 Carroll Ave., Chicago 7, Ill.

SYNTHETIC RUBBER · PAPER · FELT · CORK · FIBRE · ASBESTOS · FEL-PRO GASKETS packings • sealing materials

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THUR-MA-LOX*

A High Heat Resisting Coating that LASTS

Temperature changes "Cherry red to ice cold."

The Elements

Metal Expansion and Contraction.

Thur-ma-lox No. 7 Black high heat resisting paint provides maximum protection against the following:

Thur-ma-lox No. 7 Black is easily applied by spray or brush to hot or cold metal surfaces. Its inherent properties of elasticity prevent cracking or peeling—providing a protective coating that LASTS.

Approximately 250 sq. ft. of metal surface can be covered with one gallon.

Thur-ma-lox No. 10 ALUMINUM is once more available for industrial use.

Literature N. E. describing Thur-ma-lox No. 7 and No. 10 will be forwarded on request.

*Patented

THE M. W. KELLOGG COMPANY
Exclusive Sales Distributors
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THURMALOX COMPANY Manufacturers • DOYLESTOWN PA.

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Shift your Business into Higher Gear WITH EXECUTONE

THE MODERN SYSTEM OF BUSINESS INTER-COMMUNICATION

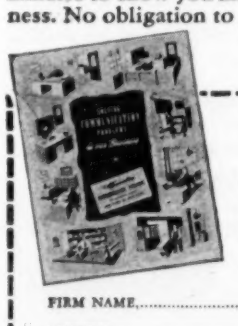
WORK FLOWS with greater smoothness—*greater speed*—from the moment you install EXECUTONE in your plant or office.

A mere press of a button places you in immediate voice-to-voice contact with any member of your organization—or with *several* at the same time! Reports are made—questions asked or answered—without a man leaving his desk, without a moment wasted. It's as easy, convenient and as personal as an across-the-desk conversation.

No more running back and forth from office to office. No more time-consuming delays while phones and buzzers go unanswered. EXECUTONE injects the split-second speed of electronics into inter-office communication . . . relieves your switchboard of "inside" traffic . . . quickens the pace and pulse of your whole business!

The U. S. Navy has selected EXECUTONE as the "inter-com" system for many of our fighting ships. It will take only a few minutes to show you EXECUTONE in your own place of business. No obligation to you.

SEND FOR BOOKLET TODAY— USE THIS CONVENIENT COUPON



Executone INC.
415 Lexington Ave., New York 17, N.Y.
Please send me your Free Booklet M-11 on solving inter-communication problems

FIRM NAME.....
ADDRESS.....
BY..... TITLE.....

For the Future of your Company and your Employees—BUY WAR BONDS!

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Speed Production.... Cut Fabrication Costs

With this Low-Priced Oxy-Acetylene Cutting Machine OXWELD CM-30

Available for Prompt Shipment

The OXWELD CM-30 Portable Cutting Machine is for cutting straight lines and bevels on metals up to 4 in. thick. It also will cut circles from 2¾ to 96 in. in diameter, and can be hand guided for simple shapes.

Convenient to Use

The CM-30 can be operated either on lightweight track for straight-line cutting, or on the work itself for cutting circles.

Write for a descriptive folder.

BUY UNITED STATES WAR BONDS AND STAMPS

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
30 E. 42nd St., New York 17, N. Y. UCC Offices in Other Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto

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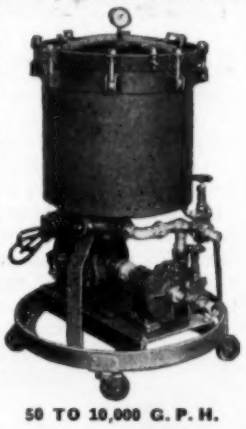
Join the Growing List of SPARKLER FILTER Users!

YOU ARE INVITED to test out the Sparkler method of Horizontal Plate filtration on your Plating Solutions, Drinking Water, Chemicals, Cutting, Grinding and Honing Oils, Lube Oils, Transformer Oils, Sulphinated Oils, etc., and make your own comparisons.

No matter what filter media you are using—plastic cloth, paper, glass cloth, asbestos pads, activated carbon or plain filter aid—any one is used more efficiently, simply and economically on the Sparkler Horizontal Plate.

Sometimes a mere suggestion as to the grade or type of filter media or filter aid makes a big difference. Permit us, through one of our field engineers, to analyze your filtering problems with you.

Send sample of unfiltered product for free filtering analysis—no obligation.



50 TO 10,000 G. P. H.

SPARKLER MFG. COMPANY
343 LAKE STREET MUNDELEIN, ILL.

SPARKLER HORIZONTAL PLATE FILTERS

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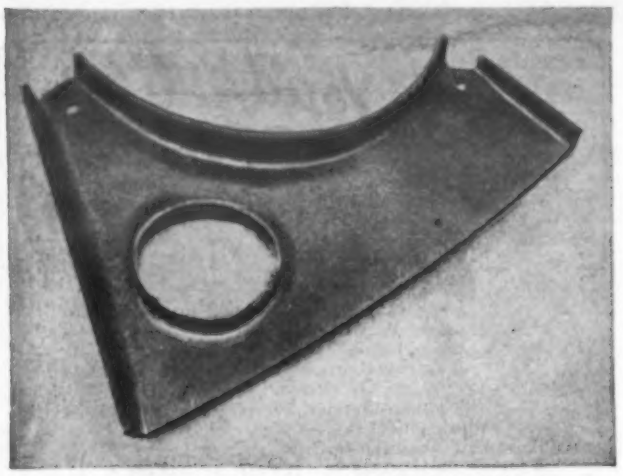


This is a typical Post Formed Phenolite baffle used in aircraft construction.

POST FORMED PHENOLITE

opens wide avenues for your successful Post-War Products

Post Formed Phenolite, a formable thermosetting sheet material, makes parts more resistant to shock . . . approximately ten times that of usual molded parts. Economical to produce in wooden molds with standard press equipment. Write us on Post Formed Phenolite for your peacetime projects.

NATIONAL VULCANIZED FIBRE CO.

Wilmington, Delaware *Offices in Principal Cities*

▲ Mention Item NED-5830 when writing ▲

THE RELIABLE FOUNDRY PYROMETER

The *Alnor* portable Pyro-Lance is a rugged, durable, portable pyrometer built with shock-resisting movement and enclosed extension thermo-couple. It stands up in foundry service and gives the accurate temperature readings essential to low-cost production of sound castings. Especially suited for use on molten brass, bronze, copper, aluminum bronze, magnesium alloys, and similar metals where temperatures are not over 2300 F. Long life, enclosed thermo-couple takes true readings below the surface, unaffected by dross or surface conditions.

Built in standard range, 0-2500 F. Also with bare wire thermo-couple for low temperature metals in crucibles or ladles. Write for bulletins giving complete description.

Illinois Testing Laboratories Inc.

430 NORTH LA SALLE STREET • CHICAGO, ILLINOIS

▲ Mention Item NED-5831 when writing ▲

CHIKSAN FORMULA FOR A *Perfect* SWIVEL JOINT

$$BB_2 + EP = \frac{LT}{P/V}$$

BB_2 = Double rows of Ball Bearings — For easy turning with minimum friction. They also maintain perfect alignment of moving parts.

EP = Effective Pack-Off — This self-adjusting unit permits the use of the same Swivel Joint for all services. Nothing to tighten or adjust.

LT = Low Torque — No excessive friction drag because turning takes place on ball bearings which hold moving members together. Tightness of Joint does not depend upon compressing packing element by means of bolted flanges, thereby causing joint to stick.

P/V = Pressure or Vacuum — Pre-determined pressure on Packing Ring prevents leaks due to pressure or vacuum. Packing automatically adjusts itself to either service.

These are the essential elements for perfect swivel action. You get ALL of them when you specify Chiksan Ball-Bearing Swivel Joints.

WRITE FOR CATALOG AND ENGINEERING DATA

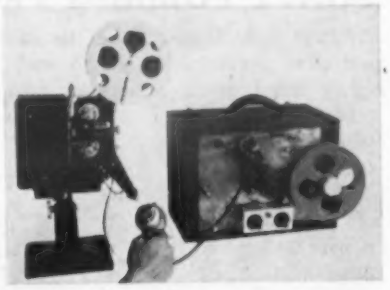
CHIKSAN TOOL COMPANY

Ball Bearing SWIVEL JOINTS for ALL PURPOSES

BREA, CALIFORNIA

▲ Mention Item NED-5832 when writing ▲

FILM SOUND RECORDER



Sound is permanently recorded or reproduced on motion picture film without processing through use of Filmgraph unit. Instrument consists of electro-magnetic dual purpose head for recording or reproduction, sapphire stylus, motor, necessary controls and connections. It is available in cabinet complete with amplifier, speaker and microphone, or may be furnished separately.

Up to four sound tracks can be made on M-5 special film, or single sound track can be applied directly onto 16-millimeter motion picture film close to sprocket holes. Pictures and sound can be synchronized by marking it to indicate start of sight and sound. Made by **Miles Reproducer Co.**, 812 Broadway, New York 3, N. Y.

▲ Mention Item NED-5833 when writing ▲

SMALL PARTS HOLDER

Worn over regular trouser belt, this small parts bag for such items as tools, screws, hardware and parts to be assembled keeps these items within easy reach and speeds up production. Made of medium weight canvas with web strap loops, bag has reinforced mouth and rope inset which holds it open. Width at top is 8 inches and depth is 9½ inches. Made by **Industrial Products Co.**, 2807 N. Fourth St., Philadelphia 33, Pa.

▲ Mention Item NED-5834 when writing ▲

PLATING RECTIFIER

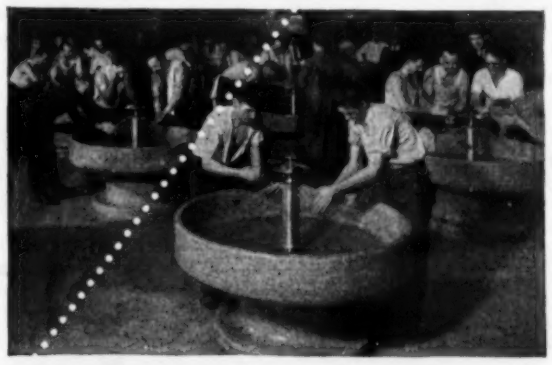
Designed for floor mounting with air intake at bottom and exhaust at top, this 6-volt, 2000-ampere plating rectifier for large installations has been added to line of 300 and 500-ampere rectifiers. This unit can be used with greater economy in large installations than four of smaller units connected together. It provides 12-kilowatt output capacity in single unit. Complete automatic control of anodizing power supply can be had by using automatic voltage regulator.

Different output ratings are possible with this rectifier: 6 volts, 2000 amperes; 12 volts, 1000 amperes; 24 volts, 500 amperes or 48 volts, 250 amperes. Rectifier has two separate secondary circuits each feeding separate bank of copper oxide rectifier stacks which may be connected either in series or parallel on direct current buses in rear of unit.

Rectifier is available in two alternating current ratings; 230 volts and 440 volts, three phase, 60 cycles. Two or more rectifiers may be connected in series or parallel to provide practically any output voltage and current required for plating or anodizing. Made by Appliance & Merchandise Dept., **General Electric Co.**, Bridgeport 2, Conn.

▲ Mention Item NED-5835 when writing ▲

WASHING FACILITIES LIKE THESE



Save Water and Maintenance

Over 70 per cent less water is consumed by Bradley Washfountains because 8 to 10 persons wash simultaneously, each with clean *running* water.

Therefore three piping connections—one each for hot and cold water, and one for the drain—take the place of 24 to 30 connections needed for "single-person" wash basins to serve the same number of persons. To the saving in installation and maintenance costs can be added the elimination of all individual faucets.

Write for descriptive Catalog 4308. BRADLEY WASHFOUNTAIN CO., 2253 W. Michigan Street, Milwaukee 1, Wis.

Write Today for Catalog 4308

BRADLEY washfountains

▲ Mention Item NED-5836 when writing ▲

In War, as in Peace . . .

CERRO ALLOYS

SAVE TIME and CUT COSTS!

CERROMATRIX (Melting Temp. 250° F.) For securing punch and die parts, anchoring machine parts without expensive drive fits, short run forming dies and other metal-working applications.

CERROBEND (Melting Temp. 158° F.) Used as a filler in bending thin-walled tubing to small radii. Easily removed in boiling water. Also used for aircraft assembly jigs, templates for forming dies and other purposes.

CERROSAFE (Melting Temp. 190° F.) Used to accurately proof-cast cavities such as molds, gun chambers, forging dies, etc. and for many similar applications.

REPRESENTATIVES AND DISTRIBUTORS

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CERRO DE PASCO COPPER CORPORATION

40 WALL STREET - - - NEW YORK 5, N. Y.

▲ Mention Item NED-5837 when writing ▲

MORE WORK PER PUMP . . .

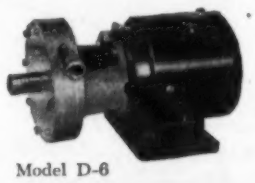
***IF IT'S AN* EASTERN**

The name Eastern as applied to the building of small pumps denotes engineering, design and workmanship that is ordinarily associated only with large industrial pumps. While small in size their performance characteristics compare favorably with those of large pumps. They are not to be confused with laboratory or toy models. A range of over 300 different models makes possible the selection of a small workmanlike pump to answer your needs. Because of their weight and size these pumps are ideally suited for incorporation in finished equipment.

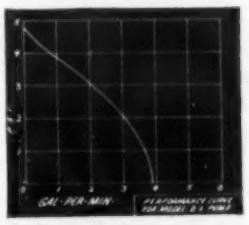
Single Stage Centrifugal Pumps

Model D-6, illustrated here, is one of a large line of centrifugal pumps manufactured by Eastern. It is compact, lightweight and designed for continuous duty in applications requiring small volumes and pressures. The pump and motor are close-coupled, with an open vane type impeller mounted directly on the motor shaft extension. The pump is sealed by an easily adjustable stuffing box or a mechanical rotary seal with a lapped carbon or bronze face. There are no bearings in the pump proper.

Size: 7½" x 4½" x 4¾".
Alloys: Available in Cast Iron, Bronze, 18-8 Stainless Steel, Monel Metal and Hastelloy C.
Power: 1/30 H.P. Totally enclosed, fan cooled induction motor.
Weight: 11½ lbs.



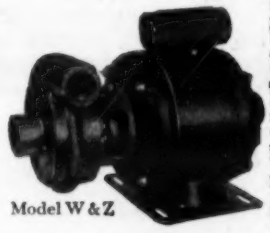
Model D-6



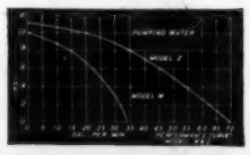
Volute Centrifugal Pumps

Other single stage centrifugal pumps are the W & Z series. These pumps are used where the economical transfer of relatively large volumes of liquids is desired. Again weight and power consumption has been kept at a minimum; the design and construction are for continuous duty and output is shown on the performance chart shown here. Both pumps are manufactured for use with motors of two different sizes depending upon the volume to be pumped. They are close-coupled volute pumps with open vane type impellers mounted directly on the motor shaft extensions without the use of internal pump bearings. The pumps are sealed with carbon faced rotary seals.

Size:
Model WA: 11½"x6¾"x7½"
Model WB: 11½"x6¾"x7½"
Model ZB: 12¼"x7¼"x8"
Model ZC: 14½"x8½"x10"
Alloys: Available in Cast Iron or Bronze
Power: General Electric Heavy Duty ball bearing induction type motors. A denotes ¼ H.P., B denotes 1/3 H.P., and C denotes ½ H.P.
Weight: From 42-60 lbs.



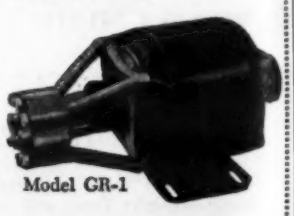
Model W & Z



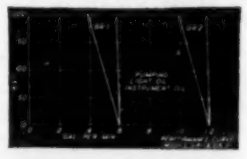
Positive Pressure Gear Pumps

Designated as the GR series these are compact, positive pressure, spur gear pumps. Quiet and efficient in operation. Designed for dependable flow at high pressures and for continuous duty operation. Used frequently for pumping light or heavy oils, fuel oil, glycerin, glycol and other organic liquids. Pumps are standard with hardened steel gears and therefore not suitable for pumping water. Self priming. The motors are close-coupled to the pumps. Equipped with bronze faced rotary seal.

Model GR-1:
Size: 11¾"x5½"x5¾".
Weight: 23 lbs.
Motor: General Electric ⅛ H.P. induction type motor.



Model GR-1



EASTERN ENGINEERING COMPANY

47 FOX STREET, NEW HAVEN 6, CONNECTICUT

▲ Mention Item NED-5838 when writing ▲

Learn What
Wet-Belt SURFACING
can do
FOR YOU!

● More and more applications are being found every day for this advanced machining method that works an entire area at once, that produces final finish while taking cut, that eliminates heat, dust, distortion, discoloring, fracturing. Wet-belt surfacing is amazingly fast—5 to 25 times faster than milling, grinding, planing, shaping. It's accurate—can hold tolerances of .0005" when desired. It's simpler—often eliminates need for jigs, as well as set-up and lock-up time. It enables inexperienced workers to get increased production and superior finish.

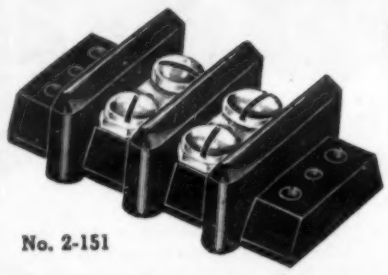
This Free Booklet

● The Porter-Cable Wet-Belt Surfacer has been a revelation in many shops. Learn more about it. Send for our new booklet "A New Precision Machining Method," which is virtually a treatise on the subject of wet-belt surfacing.

PORTER-CABLE MACHINE COMPANY
1710-10 N. Saline Street
Syracuse 8, N. Y.

▲ Mention Item NED-5839 when writing ▲

JONES BARRIER STRIPS
Solve Most Terminal Problems



No. 2-151

• A compact sturdy terminal strip with Bakelite Barriers that provide maximum metal to metal spacing. Prevent direct shorts from frayed wires at terminals.
6 SIZES—Cover every requirement. From 3/4" wide and 13/32" high with 5-40 screws to 2-1/2" wide and 1-1/8" high with 1/4"-28 screws. Jones Barrier Strips will simplify as well as improve the electrical connections of your products.
Three lines of Jones Multi-Circuit Plugs and Sockets fulfill every connection requirement. Hundreds of standard terminals.
Write today for catalog listing complete line of Jones Electrical Connecting Devices.

HOWARD B. JONES CO.
2460 George Street, Chicago 18, Ill.

▲ Mention Item NED-5840 when writing ▲

All-Wood Floor Mats

Originally designed to substitute for rubber, the ALL-WOOD FLOOR MAT has, in many cases, proven to be superior. Around machinery, for example, oil does not harm the wood and the open spaces keep the chips directly from under the feet of the operator. These mats do not "creep" like rubber but still they are flexible and easily cleaned.

ALL-WOOD FLOOR MATS reduce fatigue. They eliminate strain of standing on concrete floors and keep the operator's feet warm and dry.

The construction is simple—wood blocks hinged and held together by hardwood dowels, no sharp edges—attractive durable finish—reversible and waterproof. All mats are 1-1/16" thick-Hardwood.

*VICTORY		‡ECONOMY	
18" x 28"	$ 3.15	18" x 36"	$ 2.70
18" x 39"	4.50	18" x 48"	3.60
24" x 51"	7.65	24" x 48"	4.80
24" x 72"	10.80	24" x 72"	7.20

Prices f.o.b. Detroit

* Victory links are 8" long. ‡ Economy links are 10" long.

Special Sizes to Order

Order from your local jobber or direct from

FISHER EQUIPMENT CO.
15133 LIVERNOIS STREET DETROIT 21, MICHIGAN

▲ Mention Item NED-5841 when writing ▲

POCKET ELECTRICAL TESTER

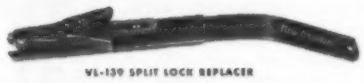
Although small and compact, Model 420 pocket Multitester provides accuracy of measurement comparable to that of larger units. Basic meter is 0.004 microamperes. D. B. meter, output meter, milliammeter and ohmmeter provide total of 23 ranges. Alternating and direct current voltmeter handles up to 5000 volts at 1000 ohms per volt sensitivity. Device is housed in hardwood case, complete with batteries, ready to operate. Made by **Radio City Products Co.**, 127 W. Twenty-sixth St., New York 1, N. Y.

▲ Mention Item NED-5842 when writing ▲

VALVE SERVICING SET

Fitting into confined places, No. VL-151 Little Handy valve spring lifter will accommodate springs with coil strength of up to 300 pounds. Measuring 8½ inches long, tool has screw controlled jaws which expand to 2⅛ inches and remain set in any position. Jaws are adjustable to various spring sizes and expand approximately parallel in vertical plane. Springs are lifted squarely, permitting easy replacement of valve stem keys. Supplementary tool is No. VL-139 split lock replacer which facilitates handling of all split type valve keys on late model motors. Made by **New Britain Machine Co.**, Dept. A, New Britain, Conn.

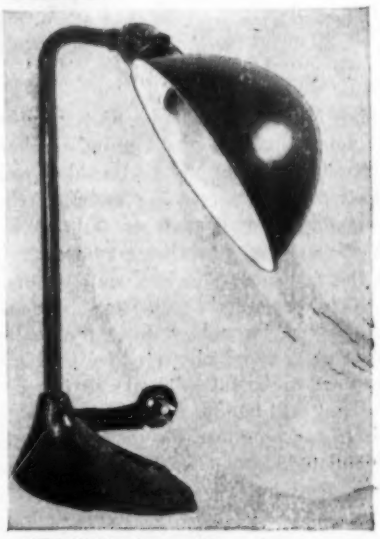
VL-151 "LITTLE HANDY" VALVE LIFTER



VL-139 SPLIT LOCK REPLACER

▲ Mention Item NED-5843 when writing ▲

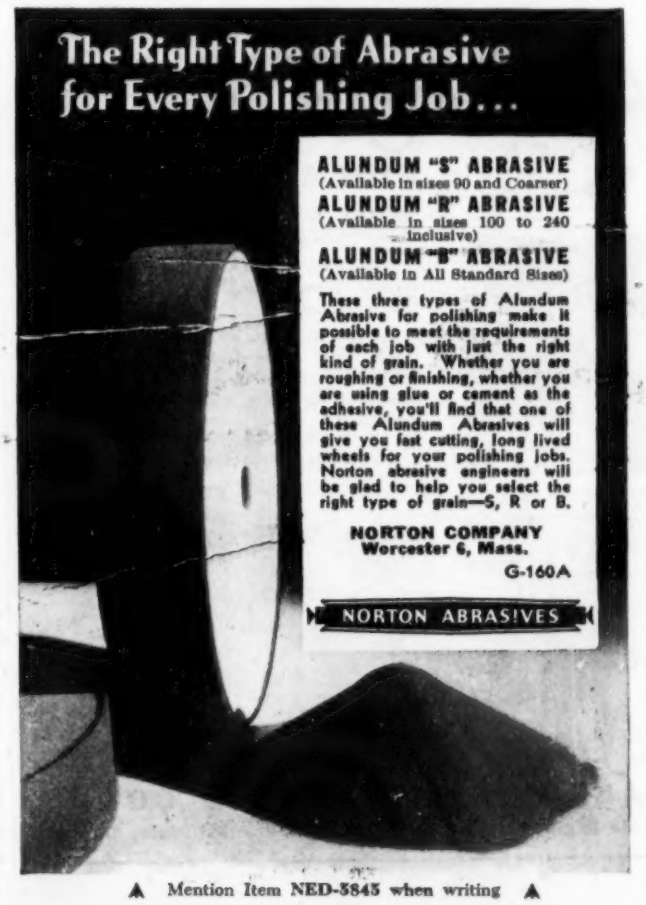
INSPECTION LAMP



Universally adjustable No. 106 Swivelier inspection lamps are available with either 9 or 12-inch arms, in brown or gray and in choice of three different types of shades. Spring tension holds lamp in adjusted position regardless of vibration or number of settings. Three screw holes in base permit mounting on horizontal or vertical surface. Made by **Reliance Devices Co.**, 30 Irving Place, New York 3, N. Y.

▲ Mention Item NED-5844 when writing ▲

The Right Type of Abrasive for Every Polishing Job...



ALUNDUM "S" ABRASIVE
(Available in sizes 90 and Coarser)
ALUNDUM "R" ABRASIVE
(Available in sizes 100 to 240 inclusive)
ALUNDUM "B" ABRASIVE
(Available in All Standard Sizes)

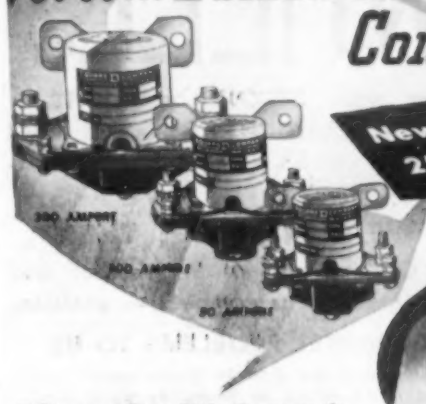
These three types of Alundum Abrasive for polishing make it possible to meet the requirements of each job with just the right kind of grain. Whether you are roughing or finishing, whether you are using glue or cement as the adhesive, you'll find that one of these Alundum Abrasives will give you fast cutting, long lived wheels for your polishing jobs. Norton abrasive engineers will be glad to help you select the right type of grain—S, R or B.

NORTON COMPANY
Worcester 6, Mass.
G-160A

NORTON ABRASIVES

▲ Mention Item NED-5845 when writing ▲

Now... 4 sizes of Aircraft Contactors



• These new Type B2A, 25 ampere aircraft magnetic contactors are designed to the same mounting specifications as the 50, 100 and 200 ampere sizes. Simplicity of design and heavy duty contact capacity assure dependable performance under severe flight conditions.

Class 9850 Type B2A contactors weigh only 7 ounces and are rated 25 amperes continuous duty for potentials up to 29 volts D.C. Successful operation is maintained under the vibration, acceleration and altitude conditions set by Army Air Forces specifications.

For details write Square D Company, 4041 N. Richards St., Milwaukee 12, Wisconsin

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

▲ Mention Item NED-5846 when writing ▲

Putting "Postwar" into the Present

This New Fairbanks-Morse Motor with *Copperspun* Rotor

There's never before been a motor quite like this. It is a motor for the future . . . and a motor with a future! Designed to incorporate all the stamina, versatility and protection possible in a motor housing.

Check These Outstanding Features—

- It is a 40° C. motor.
- It is a protected motor.
- It has an optional conduit box assembly.
- It has cross-flow ventilation.
- It has ball bearings—sealed-in and protected.
- It has the exclusive Fairbanks-Morse COPPERSPUN ROTOR.

BUY WAR BONDS

Write for detailed information: Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

FAIRBANKS-MORSE Motors
DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · WATER SYSTEMS · SCALES · STOKERS · FARM EQUIPMENT · RAILROAD EQUIPMENT

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Those Post-War WHEELS

CAST SPOKE or PRESSED WHEELS

You want STRONG • LIGHT • ROUND and TRUE Wheels that LAST — that will be a credit to your Post-War Products.

WE CAN SUPPLY THEM

in Quality and at Prices that will strengthen your competitive position.

SUBMIT YOUR WHEEL PROBLEMS TO US

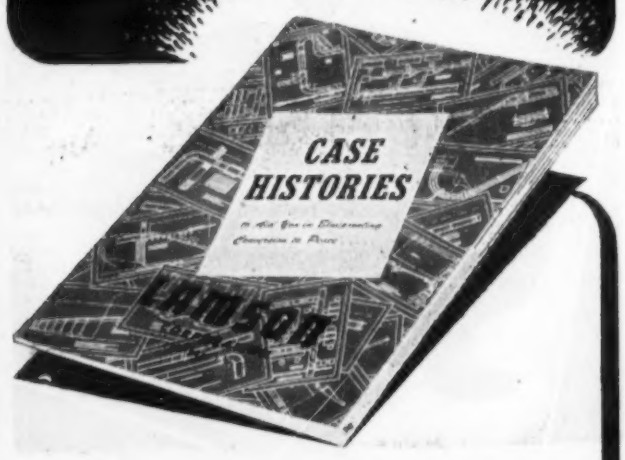
Our engineers will be glad to study your wheel needs and bring to bear, in your interests, our unsurpassed facilities for DESIGNING, TESTING and FABRICATING the wheels upon which to mount your present and Post-Victory mobile products and equipment.

We Solicit Your Inquiries

FRENCH & HECHT, INC.
SUBSIDIARY OF KELSEY-HAYES WHEEL CO.
DAVENPORT, IOWA, U. S. A.
WHEEL BUILDERS SINCE 1888

▲ Mention Item NED-5848 when writing ▲

TO AID YOU IN BLUEPRINTING
Reconversion...



A new booklet, offering concrete suggestions, prepared by Lamson engineers

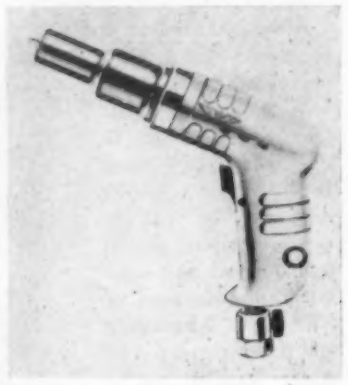
● From their wide experience Lamson engineers have selected 17 actual cases posing difficult problems of conversion, analyze them for you, and present the solution and results in full detail. Something very similar to your present reconversion problem may be among them. It is offered in the hope that you will profit by the experience of others, and the experience of Lamson engineers. Learn how, through the expert use of conveyor systems, they have helped others achieve a steady, efficient production flow, with machine-scheduling, work-in-process and parts inventory coordinated to eliminate back-handling, unbalanced loads, assembly delays. Send today for a copy for yourself, and one for your production manager.

LAMSON
Conveyors and Tubes

LAMSON CORPORATION
550 Lamson St., Syracuse 1, N. Y.
Please send me ..... copies of "Case Histories to Aid You in Blueprinting Conversion to Peace."
Name..... Position.....
Company.....
Address.....
City..... State.....
Because of the paper shortage we can send these booklets only to those who give their company and position.

▲ Mention Item NED-5849 when writing ▲

IMPACT SCREWDRIVER

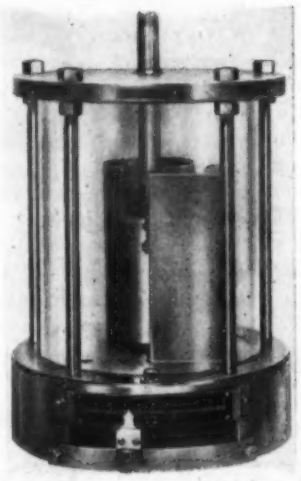


Torque regulator in handle of this impact screwdriver or nut setter permits operator to adjust torque to correct amount required to tighten nut or screw. This line of pneumatically powered tools features roller clutch impact mechanism consisting of anvil, hammer and two cylindrical steel rollers. In operation, centrifugal force throws rollers against hammer which transfers full torque through to work in form of sudden impact. When selected torque is obtained, rollers rebound from anvil face and do not allow hammer to engage for impact.

Illustrated model 1011 impact screwdriver has aluminum handle and housing, weighs 2 pounds 2 ounces and measures 7 inches in length. It will accommodate Phillips, Reed & Prince or standard chisel bits and finders for slotted screws. Impact nut setter is available with 9/32 or ⅜-inch square drive adapter for sockets. Both tools can be supplied with plastic handles and housings and are equipped with 8 feet of hose and standard fittings. Made by **The Aro Equipment Co.**, Erie St., Bryan, O.

▲ Mention Item NED-5850 when writing ▲

FLOW SPLITTING DEVICE

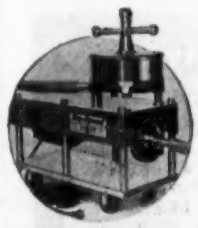


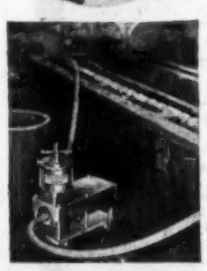
Accurate division of liquid flow into two streams of required proportions is possible with this Micro-Rotaweir. Adjustment of proportions of flow division are made by setting outside lever and pointer to percentage desired. Device may be obtained with fittings in all metals to suit conditions of application. Shell may be either metal or Pyrex glass. For high melting point fluids, metal shell may be lagged and steam heating coils placed inside unit.

Inlet pipe enters at top and discharges liquid into receiving chamber which has rectangular weir as overflow. Vertical knife edge is set against external edge of weir, thus dividing stream into two parts as it flows over lip of weir. One of streams flows into closed compartment having bottom outlet. Other stream spills into area surrounding receiving chamber which also discharges from bottom. Receiving chamber is connected through stuffing box at bottom to external lever by means of which weir may be rotated to any position with respect to flow-dividing knife edge.

Unit will handle flows of from 30 to 900 gallons per hour. Sizes for handling up to 15,000 gallons per hour are contemplated. Made by **Fischer & Porter Co.**, 928 County Line Rd., Hatboro, Pa.

▲ Mention Item NED-5851 when writing ▲





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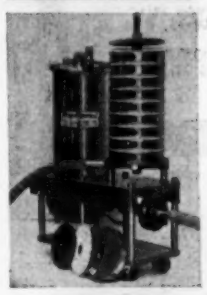
FILTERS FOR ALL LIQUIDS

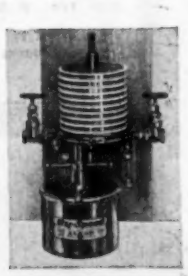
"SEALED DISC" FILTERS for Water, Acids, Chemical solutions, etc.

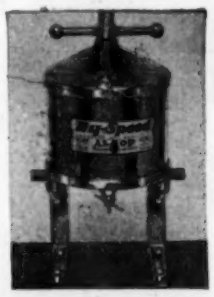
"DISC-PAK" FILTERS for Fuel, Diesel, Turbine, Transformer, Hydraulic, Machine Oils and Coolants.

Alsop filters have no superior in the simple and economical operation and finished result, of completely cleansing liquids of dirt, rust, moisture and other impurities.

Send for our book on Filtration







ALSOP ENGINEERING CORP.
310 Main Street Milldale, Conn.

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- CUTS ALL METALS—WOOD—PLASTICS
- SAWS AND FILES IN INACCESSIBLE PLACES
- OPERATES BY ELECTRICITY—FLEXIBLE SHAFT—AIR
- SIMPLE AND EASY TO USE—LIBERALLY GUARANTEED

SEE YOUR JOBBER OR WRITE DIRECT

***Mid-States* EQUIPMENT CO.**
Saw-Gun Division
2439 SOUTH MICHIGAN AVENUE, CHICAGO 16, ILLINOIS

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6 WAYS TO SAVE MINUTES and MANPOWER

● By helping make the most of tools, floor space and productive time, these Lyon products are stepping up war production in large and small plants all over America. Ask your Mill Supply Distributor for prices and details on Lyon's complete line of Shop and Storage Equipment available for prompt delivery to industrial plants on satisfactory priority.

WHAT ABOUT POST-WAR?
Do your post-war products include sheet steel or aluminum? Check Lyon's manufacturing and designing facilities.

LYON METAL PRODUCTS, INCORPORATED
General Offices: 922 Madison Avenue, Aurora, Illinois
Branches and Distributors in All Principal Cities

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SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
106 CENTRAL STREET • SOMERVILLE 45, MASS.

▲ Mention Item NED-5855 when writing ▲

BEFORE

The "before" picture would show the motor, running on sleeve bearings, mounted in a horizontal position. From it, a belt drove a jackshaft, which in turn was belted to the 48" rock emery mill.

AFTER

Now look at the "after" picture! The extra capacity of Fafnir Motor Cartridges for *thrust* as well as *radial* loads permitted the motor to be mounted vertically. The jackshaft was eliminated, and the motor belted directly to the emery mill.

Fafnir Ball Bearing Motor Cartridge

Previously, the belts were replaced every 6 months at a cost of $75.00. Since the Fafnir change-over, the same belt has run 2 years—*a belt saving alone of $300.00.* Daily oiling of the jackshaft was eliminated, adding a *lubricant saving.* The drive is much *quieter.* Speed stepped up from 225 to 300 r.p.m. *boosting production.* And the better drive permits the mill to be run tighter *boosting product quality.* The Fafnir Bearing Co., New Britain, Connecticut.

Buy War Bonds and Stamps

FAFNIR
BALL BEARINGS

▲ Mention Item NED-5856 when writing ▲

BAKELITE
TRADE-MARK

5 YEARS' HARD SERVICE

-LESS THAN 10 PER CENT WEAR!

FIVE YEARS AGO, a protective enamel finish based on a BAKELITE resin was put on the cement flooring of the Coca Cola Bottling Company's St. Paul plant. Part of the 64,000 square feet is in the plant proper, where it withstands the traffic of bottling operations. The rest is in the garage, and includes the truck-washing stalls, loading platforms, and other hard service areas. Today, the company reports that the finish is still in excellent condition, showing less than 10 per cent wear.

This handsome, maroon finish was applied by wet buffing the BAKELITE resin based enamel into the properly mixed and set cement with a motor-driven rotary floor brush of steel wool. The method proved very practical—covering large areas quickly, and producing a deep-seated, durable finish that eliminates dusting and is very easy to keep clean. Maintenance costs have been extremely low.

Write Department 16 for further information about this and other durable finishes based on BAKELITE resins—or consult your regular supplier.

TRADE MARK

BAKELITE CORPORATION, 30 E. 42 St., New York 17
Unit of Union Carbide and Carbon Corporation

UCC

Coating Resins

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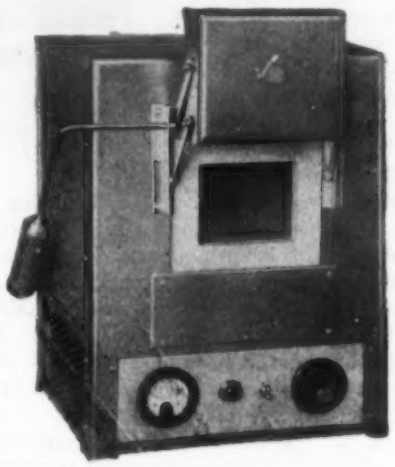
SMALL ELECTRIC FURNACE

Providing temperatures up to 1850 degrees Fahr., Model OFE furnace is designed for heat treating tools and dies in machine shops, as well as for general industrial and laboratory use. Instrument panel is built into base. It has welded steel frame and sides of Transite. Heating chamber is insulated with 4½ inches of insulation. Heating element is of nickel-chromium alloy in coil form which surrounds four sides of muffle.



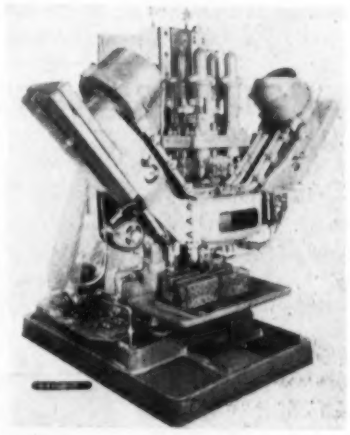
Door is supported by two sets of parallel levers and moves out of way when opened. Door is counterbalanced for ease of operation and is fully insulated. Input controller governs heat selection and automatically turns heat "on" or "off" during any desired portion of 1-minute cycle. No rheostat is used and maximum efficiency is assured. Instrument panel includes indicating pyrometer which is indicated to 2000 degrees Fahr., pilot light and control switch.

Heating chamber is 5½ inches wide, 4½ inches high and 10½ inches deep. Unit is designed for operation on either 115 or 230 volts and is rated at 2000 watts. List price is $194. Made by **Thermo Electric Mfg. Co.,** 484 W. Locust St., Dubuque, Iowa.

▲ Mention Item NED-5858 when writing ▲

HIGH SPEED NUT TAPPER

Class 3, 4 or 5 threads are produced at production rates with this fully automatic No. 48 nut tapping machine. Four nuts are delivered simultaneously to four tapping stations by means of two hopper feeding mechanisms, each equipped with two chutes. Precision lead screw control is used on all four spindles, operated simultaneously by single segmental gear drive which starts taps at slow speed and reverses them at double the tapping speed. Threads on master screw and its spring tensioned nut match those of tap. Screws and nuts are changed when tap pitch is changed.



Two sizes of nuts can be tapped at one time, each discharged to its individual collection box so that product of each spindle may be gaged. Safety interlocks prevent starting of motors in wrong sequence and assure that blanks are properly positioned before taps can operate. Maximum production is approximately 9000 nuts per hour. Any nut blanks which can be hopper fed can be tapped up to ½ inch with 13 threads per inch. Made by **Bodine Corp.,** 317 Mountain Grove St., Bridgeport, Conn.

▲ Mention Item NED-5859 when writing ▲

COIL STOCK FEED IT FASTER with LITTELL AUTOMATIC CENTERING REELS

CONTINUOUS feeding of coil stock with LITTELL Automatic Centering Reels increases production, improves quality and saves materials. Provides automatic feeding direct from coils. Unit shown can be used as a Scrap Winder or Reel by reversing motor. Capacities, 300 and 600 lbs.

Ball bearing for smooth, rapid operation, LITTELL Reels are standard press-room equipment. Swivel head. Adjustable arms. Steady, smooth-flowing coil. Capacities, 100 to 20,000 lbs. Plain and motor driven. Single and double types.

Besides Reels, Winders and Coil Cradles, LITTELL makes Roll and Dial Feeds, Feeding and Straightening Machines, Scrap Cutters, Air-Blast Valves, Safety Feeders and Pickers.

ASK FOR BULLETINS

F.J. LITTELL MACHINE CO.
4161 RAVENSWOOD AVE., CHICAGO 40, ILL.

▲ Mention Item NED-5860 when writing ▲

The HOBART'S Simplified Control "AT THE WELD" is One Reason for Its Greater Speed.

With Hobart's exclusive features you get far better control of the arc, which makes for greater speed and more quality welding than with any other type of arc welding equipment. Both experienced and inexperienced operators like Hobart for its simplicity and capacity for close control on all types of welding jobs. Write for complete information today!

Arc Welding Design Service **FREE!** *Ask about it*

HOBART BROS. CO., Box ND-184, Troy, O.
"One of the World's Largest Builders of Arc Welding Equipment."

HOBART *Simplified* **ARC WELDERS**

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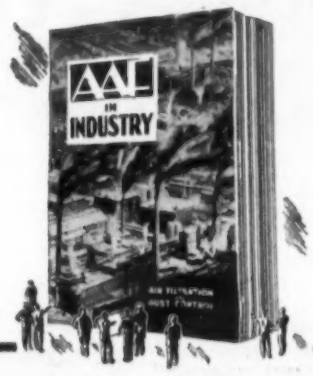
Whatever your Dust Problem—
ASK FOR HELP FROM AAF



Whether you have a problem involving the elimination of atmospheric dust or the control of process dust—AAF engineers are ready *now* to suggest a dust-control system to meet your specific requirements.

May we send you a free copy of our illustrated booklet "AAF In Industry"? This book describes the complete line of AAF equipment and its many applications. There's no obligation, of course.

BUY WAR BONDS

AMERICAN AIR FILTER COMPANY, INC.
INCORPORATED
391 CENTRAL AVE., LOUISVILLE 8, KY.
IN CANADA: DARLING BROS., LTD., MONTREAL, P. Q.

▲ Mention Item NED-5862 when writing ▲

Free—Send for These Today!

Here's a Check List of New Allis-Chalmers Bulletins That May Belong in Your Technical Library.

- ☐ **INDUSTRIALIZING THE SOYBEAN** — Illustrates typical processing plant equipped with Allis-Chalmers machinery. B6258.
- ☐ **HYDRAULIC LOG BARKER** — New A-C Streambarker which removes bark without "brooming" of logs is described in B6341.
- ☐ **DRY-TYPE TRANSFORMERS** — B6334 tells how new Induced Cooling moves air through transformer by fans, baffles.
- ☐ **DISTRIBUTION TRANSFORMERS** — Photographs, tables, diagrams give complete picture of this entire A-C line. B6125-A.
- ☐ **FIRE PUMPS** — B6336 shows how A-C fire pumps pay for themselves through better protection, lower insurance risk.
- ☐ **LOW-HEAD SCREENS** — *How* and *why* this type of A-C screen is most efficient for many operations is told in B6330.
- ☐ **END-TENSIONED SCREEN DECK** — B6321-A describes the new principle of longitudinal tensioning of screen surface.

A 1783

Name and Position

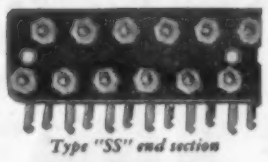
Street Number

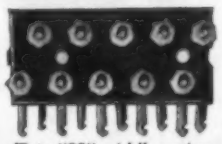
City and State

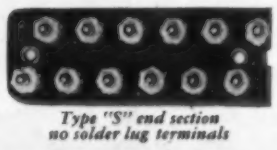
ALLIS-CHALMERS · MILWAUKEE 1, WIS.

▲ Mention Item NED-5863 when writing ▲

CANNON ELECTRIC SECTIONAL CABLE TERMINALS


Type "SS" end section


Type "SS" middle section


Type "S" end section no solder lug terminals

For wiring distribution systems of signal, telephone, radio, public address and other applications requiring wire smaller than No. 18 Gauge.

Designed primarily to make standard cable terminals of any desired size above 6 pairs in additional multiples of 5 pairs using 3 standard stock sections. Available without lugs.

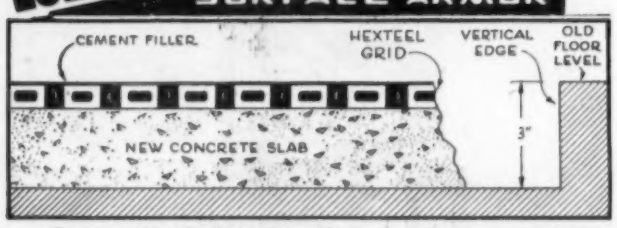
Terminal posts have No. 8-32 cad.-plated brass screws with nuts and washers. Insulation, phenolic. Terminal pairs are ⅝" on centers. Cannon quality throughout.

Write to Dept. A-113, Cannon Electric Development Co., 3209 Humboldt St., Los Angeles 31, California for further information and prices.

CANNON ELECTRIC
Cannon Electric Development Co., Los Angeles 31, Calif.
Canadian Factory and Engineering Office:
Cannon Electric Company, Ltd., Toronto, Canada

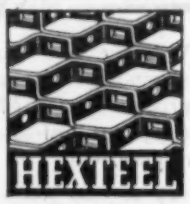
▲ Mention Item NED-5868 when writing ▲

HOW TO MAKE AN OLD FLOOR NEW . . . PRACTICALLY *Everlasting*
KLEMP HEXTEEL
HEAVY DUTY SURFACE ARMOR



Easy method of laying Klemp Hexteel on old concrete or brick. Can also be laid over new or old wood floors.

Imbed this heavy linked steel mesh in concrete or mastic over old or new concrete, or wood, and you have a solid level lifetime floor with steel bearing surface for wheels. Repair old floors with Hexteel. Banish crumbling depressions, cracks, ruts, potholes.



SEND FOR NEW KLEMP CATALOG
Hexteel, Floorsteel, Gratings, Stair-Treads, Safety Mats.
Write or wire

WM. F. KLEMP COMPANY
"Steel Flooring Specialists"
6607 S. Melvina Ave. Chicago 38, Illinois

▲ Mention Item NED-5869 when writing ▲

INDUSTRY NOW STORING IN NEFF & FRY BINS

Evidently storage bins rate high in government circles for many a plant has furnished the high priority rating necessary for their installation. Result—greatest bin year we have ever had.

Evidently the plants involved also think well of Neff & Fry bins—that they are time savers, space savers, labor savers, material conservers.

Both are right for Neff & Fry bins soon pay for themselves, keep on serving for a generation, with virtually no maintenance.

If possible, order now. If necessary to wait, make Neff & Fry bins a MUST as soon as priorities permit.

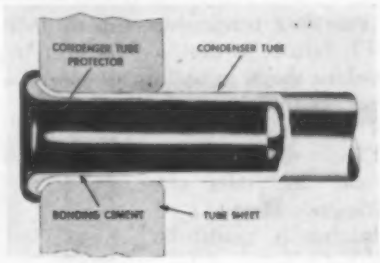
Write for catalog.

THE NEFF & FRY COMPANY
Camden, Ohio

NEFF & FRY
BINS

▲ Mention Item NED-5870 when writing ▲

TUBE PROTECTORS



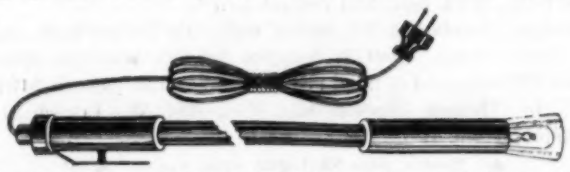
Providing protection of condenser tube inlet ends against destructive effects of air erosion and sand abrasion, John Crane condenser tube protectors fit inside inlet end of tubes and are securely cemented in place. They provide bell-mouth venturi entrance for circulating water.

Protectors are molded of wear resistant, hard Bakelite, unaffected by temperatures to 275 degrees Fahr. and resistant to air impingement and contaminated salt or fresh condenser circulating water. They are available for all marine and stationary power plant condensers to fit tubes of following sizes: ⅝ inch, 16 and 18 gage; ¾ inch, 16 and 18 gage; ⅞ inch and 1 inch, 18 gage. Made by **Crane Packing Co.**, 1816 Cuyler Ave., Chicago 13, Ill.

▲ Mention Item NED-5871 when writing ▲

SHELL INSPECTION LIGHT

Lightweight, easily handled and nonbreakable, this inspection light is designed for checking interior of shells, barrels, forgings and similar pieces. It consists of small, standard



110-volt bulb mounted in 30-inch or longer tubular fiber handle, with 6-foot extension cord. Both non-vaporproof and explosionproof models are available. List price is $10 and lights are available on AA-5 or better priority. Made by **Trimount Instrument Co.**, 37 W. Van Buren St., Chicago 5, Ill.

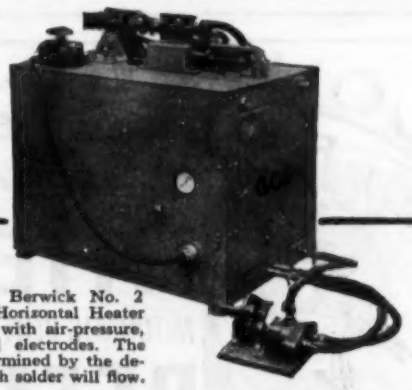
▲ Mention Item NED-5872 when writing ▲

REVOLVING TRACTOR CRANE

Having lifting capacity ranging from 1500 to 6000 pounds, depending upon boom angle and working radius, Model D full-revolving tractor crane is designed to facilitate load handling. Featuring high mobility, simplicity of control, travel speeds of up to 15 miles per hour and turning radius of 15 feet, tractor can be supplied with standard 16-foot boom. Longer booms and special gooseneck designs are available on order.

In addition to regular tractor controls, hoist lever and turntable lever control all operations. Load stresses are carried on welded steel frame bearing directly on tractor axles. Frame design affords accessibility to engine. Rear power take-off and drawbar are standard for usual tractor operations when load handling is not being used. Made by **Industrial Equipment Co.**, Fifty-ninth & Doyle Sts., Emeryville 8, Calif.

▲ Mention Item NED-5873 when writing ▲



The a.c.f. Berwick No. 2 Type "C" Horizontal Heater is equipped with air-pressure, water-cooled electrodes. The heat is determined by the degree at which solder will flow.

FASTER SOLDERING and a SOUNDER JOINT with the a.c.f. Berwick Electric Soldering Heater

Heating the piece to be soldered to the temperature at which the solder flows, gives a cleaner, stronger soldered joint. The No. 2 Type "C" a.c.f. Berwick Horizontal Electric Heater heats *quickly;* to 350°F. for soft solder, to 1350°F. for silver solder.

To solder a tube to a gage body, the body is placed between the electrodes and spot-heated to desired temperature in a few seconds. The tube is placed against the body, and the solder applied. This immediately melts, and flows to form a clean, strong joint.

Write us your soldering problems. Send samples to solder for your inspection and comparison.

AMERICAN CAR AND FOUNDRY COMPANY
30 CHURCH STREET, NEW YORK, N. Y.
CHICAGO DETROIT ST. LOUIS

▲ Mention Item NED-5874 when writing ▲

LIFT THE LOAD
HIGHER AND *FASTER*
WITH *Northern* HIGH-LIFT LOW HEADROOM
ELECTRIC HOISTS

The high hook lift-low headroom feature of Northern Electric Hoists will add 12" to 36" to the working height of your building—without extra expense—without altering the building. This means better use of storage space, easier handling of bulky loads, faster operation because clearances are greater.

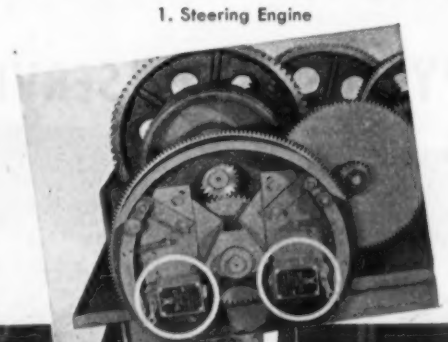
Northern Hoists are also superior in strength, lifting power, speed, and handling.

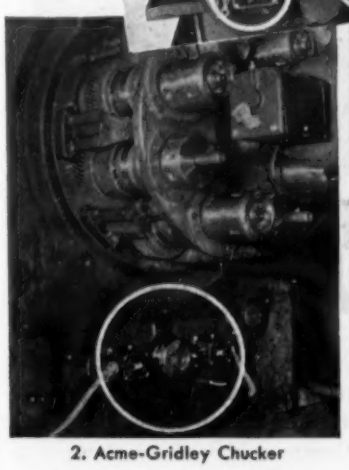
Northern WRITE FOR BOOKLET 8
ENGINEERING WORKS
2615 Atwater Street, Detroit, Michigan
Offices in Principal Cities
Northern Crane & Hoist Works Limited, Windsor, Canada

▲ Mention Item NED-5875 when writing ▲

4 out of 5
Protect YOUR machines with SNAP-LOCK switches

1. Steering Engine




2. Acme-Gridley Chucker

3. Milling Machine

More than 80% of all machine tool builders equip their machines with Snap-Lock Switches—for a very definite reason.

They are made for heavy-duty service—more rugged, stronger and better insulated, with a safety factor of 100% over rated capacity. Of course they cost more than run-of-the-shelf switches, but they are worth more, measured in terms of millions of contacts.

Snap-Locks protect the machine itself against damage, prevent production delays and cut down work spoilage due to switch failure.

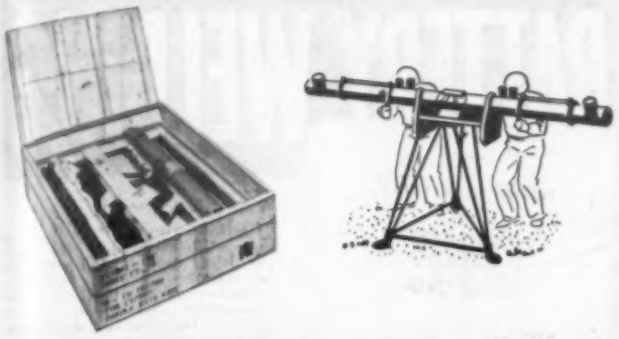
SNAP-LOCK Switches are Engineered for the Job

Whenever you need Limit Switches, Station Control Switches or Motor Starter Switches, give our engineering department the details and let them recommend the switch with the Snap-Lock principle that meets your particular operating conditions.

Snap-Lock is the patented Switch Principle, designed by Machine Tool Builders for Machine Tool Builders.

ELECTRICAL MANUFACTURING DIVISION
THE NATIONAL ACME CO.
CLEVELAND, OHIO

▲ Mention Item NED-5876 when writing ▲



GENERAL Wirebound Box for Overseas Shipment

GENERAL Heavy-Duty Wirebound Shipping Container especially designed for the overseas shipment of knocked-down tripod for anti-aircraft director. Wirebound construction assures extra strength, substantially reduces weight—for easier, cheaper handling. This is one of the many types of GENERAL "Part of the Product" containers that are serving the war effort. Write us for information on how GENERAL engineered shipping containers can better serve you tomorrow.

GENERAL BOX COMPANY

General Offices: Corner of Dearborn & Illinois Streets, Chicago, Illinois. District Offices and Plants: Brooklyn, Cincinnati, Detroit, E. St. Louis, Kansas City, Louisville, Milwaukee, New Orleans, Sheboygan, Winchendon. Continental Box Company, Inc.: Houston, Dallas.

▲ Mention Item NED-5877 when writing ▲

Ermeto—the really *new* fitting!

The Ermeto Safety Fitting makes it possible to connect tubes of any metal quickly, effectively and cheaply. *Such connections will hold beyond the burst strength of the tube itself!* The joints will withstand excessive vibration for an indefinite period without losing their original tightness. This remarkable new fitting has proved itself in thousands of installations on hydraulic, oil, water, gas, and fuel lines.

Twenty-eight page Ermeto Catalog available on request.

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO
Plants: Cleveland, Columbia City, Ind., Los Angeles, Canada—St. Thomas, Ontario

▲ Mention Item NED-5878 when writing ▲

BAUER & BLACK

Industrial Tape

PRESSURE SENSITIVE ADHESIVE

Heat resistant tape solves plane engine problem

The small abrasive cartridges used to remove burrs and rough edges from engine castings must withstand tremendous heat and friction.

After months of trying one material after another, one famed aircraft engine maker found Bauer & Black No. 228 Heat Activated Tape the ideal adhesive. After forming the cartridge with several wraps of B&B Tape, it is baked in an electric oven to bond the layers of tape to the abrasive covering.

Thus, frictional heat failures have been slashed . . . and costs on hundreds of thousands of abrasive cartridges have plummeted.

THIS IS OUR SERVICE

Trained engineers, at your request, will consult with you on your problems . . . test each of our full line of industrial tapes to find the *right* one for the job you want done. No guesswork . . . and no obligation. This service is saving up to 45% of tape costs for many manufacturers, large and small. Call or write Dept. 410 today.

A Product of

BAUER & BLACK

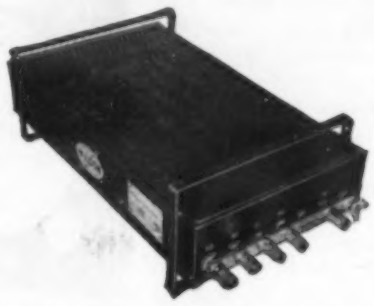
Division of The Kendall Company

2500 SOUTH DEARBORN STREET, CHICAGO 16, ILLINOIS

▲ Mention Item NED-5879 when writing ▲

TACK WELDING CONTROL

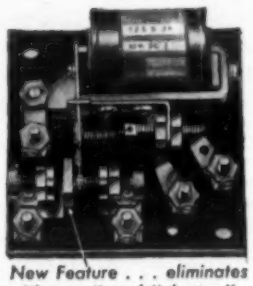
Available in 150 and 230 ampere sizes, type 30 Wilson special tack welding circuit control panel is designed for tack welding with constant potential supply. Round nichrome wire resistors are mounted on insulators. Housing has sheet metal sides and expanded metal top to provide for full circulation of air. Current values are controlled by contacts and are adjusted by turning fiber handles tight against copper bus bar to connect various resistors into circuit. Resistors are disconnected by turning handles in opposite direction and locking them in position. Current adjustment in both units is possible in 10-ampere steps. Made by **Air Reduction,** 60 E. Forty-second St., New York 17, N. Y.



▲ Mention Item NED-5880 when writing ▲

FLAT KEYING RELAY

Chatter has been eliminated in action of this series 200 Old Timer flat keying relay by utilizing energy absorbing material sealed within contact carrying cage. This compound is unaffected by age, oil or moisture. With input of 50 milliwatts, it will key up to 150 words per minute or 60 impulses per second. Contacts will carry up to 2 amperes. Made by **Kurman Electric Co.,** 35-18 Thirty-seventh St., Long Island City 1, N. Y.

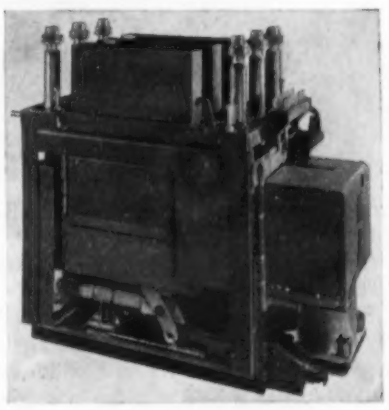


New Feature . . . eliminates "bounce" and "chatter"

▲ Mention Item NED-5881 when writing ▲

AIR CIRCUIT BREAKER

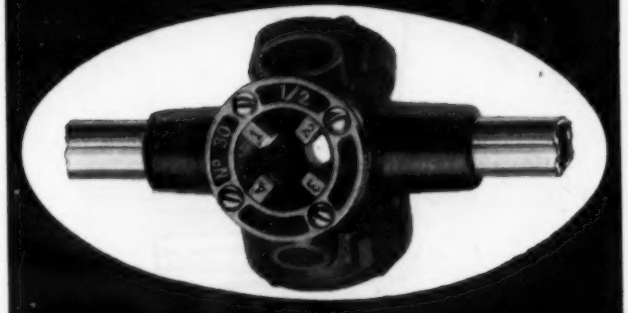
Designed for use in vertical lift metal clad switchgear equipment, Ruptair magnetic type air circuit breaker has compact overall dimensions with all parts readily accessible. Unit is available in high voltage, oil-less switchgear rated at 5000 volts and below and 150,000-kilovolt interrupting capacity and below.



Arc chute has been coordinated with contact and arc runner design to give consistent and reliable interruption through entire range of current to be interrupted. Magnetic circuit, consisting of one husky blowout coil and two laminated iron pole pieces per phase, is arranged to force arc up into arc chute immediately upon separation of arcing contracts. Made by **Allis-Chalmers,** 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-5882 when writing ▲

"Tops" among 3-WAY THREADERS



In Pipe Tools—for nearly half a century TOLEDO has maintained unbeatable quality and performance in their complete line. For example—the Toledo 3-WAY THREADER is lightest, smallest and easiest to operate of all 3-way tools! No. 30 threads 3/8" to 3/4" pipe, wt. 4 3/4 lb. No. 31 threads 1/2" to 1" pipe, wt. 7 lb. The Toledo Pipe Threading Machine Company, Toledo, Ohio. New York Office, No. 2 Rector St. Bldg.

TOLEDO

PRECISION PIPE TOOLS

▲ Mention Item NED-5883 when writing ▲

DURO-CHROME Hand Tools

2 More Reasons Why They're Called "Doggone Good Tools"

Two good reasons, too, why you should check first with Duro for hand tools needed in your plant. Insofar as is consistent with our commitments for supplying military requirements, we are making every effort to supply tools essential to Industry.

Write Today For Free Data Pages

Tell us what you need in hand tools . . . we will send you data pages and information on the tools we are in position to supply.

Duro Metal Products Co., 2649 N. Kildare Ave., Chicago 39, Illinois

DURO TOOLS (HAND TOOL DIVISION)

The Mechanic's Best Friend

OVER A BILLION BUILT SINCE 1916

ALSO MAKERS OF DURO MACHINE TOOLS

▲ Mention Item NED-5884 when writing ▲

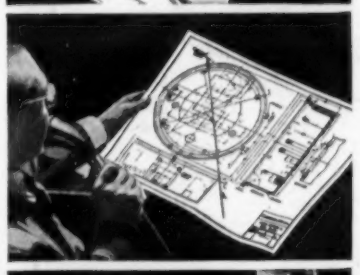
DIETZGEN DIRECTO *Black on White* PRINTS

FROM DRAFTING ROOM TO THE SHOP IN MINUTES!

A Dietzgen Directo Black on White Print . . . an exact black on white duplicate of the original drawing . . . can be made, finished and ready to use, in less than a minute. That is important news to any factory today. It means a great saving in time between drafting room and machine shop.

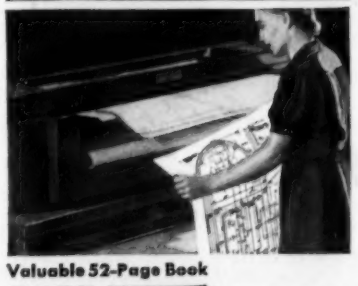
EASY TO MAKE . . . MADE IN SECONDS

Any man, woman, boy or girl can easily learn how to make Directo black on white prints . . . printed by light in seconds; developed and ready to use before the minute is up.



"AS CLEAR AS BLACK ON WHITE"

Because Directo Prints *are* black on white, life-size, life-like, easy to read, easy to understand, they save time, confusion, errors and waste . . . gains no business can afford to ignore.



SIMPLE EQUIPMENT

No darkroom, running water, tanks, trays or troughs. No drying equipment, no offensive odors. A complete high production unit requires only the space of a small table.

Valuable 52-Page Book FREE

How to make and how to use Directo Prints, their many advantages to factories, engineering offices, schools, etc., are told in a 52-page book just off the press. Free at any Dietzgen dealer or office listed at right. Call or write for your copy today.

EUGENE DIETZGEN CO.

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New Orleans • Pittsburgh • Los Angeles
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Dealers in All Principal Cities

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DIRECT POSITIVE COPIES

▲ Mention Item NED-5885 when writing ▲

DUST REDUCES PLANT EFFICIENCY

Many do not realize that dust reduces Plant efficiency in many ways. Our experience over 30 years convinces us that the losses are far greater than most Plant Managers realize. DRACCO Dust Control has eliminated serious and costly dust hazards for many. A dust-free plant is by far the most efficient. Why not consult DRACCO Engineers?

Write for Bulletin No. 302

DRACCO CORPORATION

4053 East 116th Street, Cleveland 5 Ohio New York Office: 130 West 42nd Street

PNEUMATIC CONVEYORS • DUST COLLECTORS

▲ Mention Item NED-5886 when writing ▲

NO HELP WANTED!

. . . Use gravity instead of manpower

SPEEDWAYS, the new gravity, ball-bearing roller case conveyor, moves packages with lightning speed—it saves manpower because gravity works for you!

YOUR lightweight gravity case CONVEYOR!

LIGHTWEIGHT... SPEEDWAYS weigh only 7 pounds per foot—one man can easily carry a ten-foot length! 10' and 5' straight sections easily attached—45° and 90° reversible curves — 3 sizes adjustable stands—portable or permanent installations.

Enlist SPEEDWAYS for your job! — the multi-purpose, low-cost *gravity* case conveyor. Write for specifications and price list! Immediate delivery from stock.

AGENTS—*A few choice territories are still available. Write for details.*

SPEEDWAYS CONVEYORS

3082 Main Street
Buffalo 14, N. Y.
Amherst 2100

▲ Mention Item NED-5887 when writing ▲

Try Arkwright Tracing Cloths at our expense...

Arkwright Finishing Co., Dept. B, Providence, R. I. Please send free samples of Arkwright Tracing Cloths so I can compare them with what I'm using.

Name.....
Firm.....
Street.....
City..... State.....

. . . Mail this coupon for generous free sample today

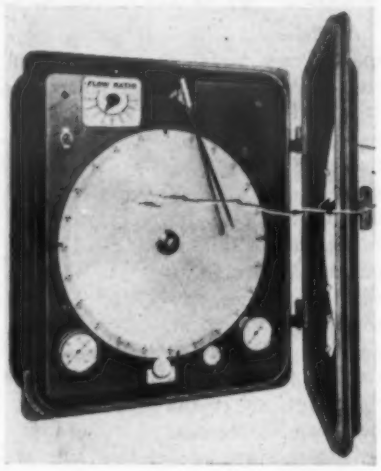
Why do so many darftsmen prefer Arkwright Tracing Cloths? Here's your chance to find out . . . for yourself. Today, mail this coupon for free sample sheets. After you've tried them out on your own board, you'll *know* why Arkwright Tracing Cloths rate so high. Cut out and mail coupon now! Arkwright Finishing Company, Providence, R. I.

Arkwright TRACING CLOTHS

AMERICA'S STANDARD FOR OVER 20 YEARS

▲ Mention Item NED-5888 when writing ▲

FLOW RATIO CONTROLLER



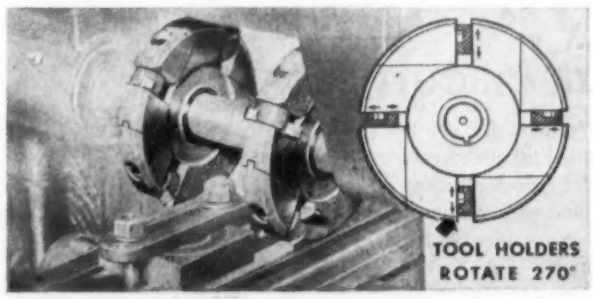
Automatically performing function of maintaining one flow at fixed percentage of second variable flow, Rotameter Ratio flow controller is simple, positive proportioning device. Ratios may be maintained at any point from 1/5:1 up to 5:1 by moving ratio index button. Liquid flows from 1 to 6000 gallons per minute may be proportioned, as well as gas flows in equivalent volumes.

Two Rotameters with electric transmission for remote readings are placed in respective flow streams. Remote flow-responsive balance beams of these units are placed back-to-back and connected by cross beam. From this beam is suspended arm whose position may be changed by sliding it on beam. This suspension arm is connected to Rotamatic air-operated control mechanism which in turn transmits air pressure to air-operated valve in flow line of stream which is to be maintained at fixed percentage of main flow. Thus, position of arm suspended on cross beam determines flow ratio of one stream to other. Made by Fischer & Porter Co., 928 County Line Rd., Hatboro, Pa.

▲ Mention Item NED-5889 when writing ▲

UNIVERSAL FLY CUTTER

Utilizing standard high speed steel or carbide bits, this universal fly cutter performs work of many special cutters in regular or production work. It may be used for slotting;

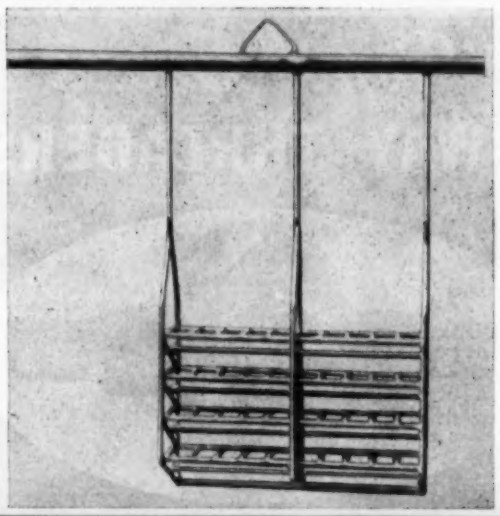


straddle and form milling; boring; flat surface milling and disc and gear cutting. It is adaptable for machining plastics and light metals as well as steel on horizontal or vertical mills and drill presses.

Standard bits of any type are inserted in holders which may be rotated 270 degrees at right angles to shaft, permitting individual adjustment for both width and depth of cuts. Each bit and holder is held in place by single Allen set screw. Four or six bits used are claimed to generate less heat than is developed with standard milling cutters.

Body of tool is cast alloy containing nickel, molybdenum, steel and iron. Tool holders are case hardened steel. All parts are precision machined and entire unit is balanced for use at any speed. Stock sizes are 4, 6, 8 and 10-inch diameters for cut widths from ⅝ to 1 inch. Made by Newfield Machined Parts Co., 7160 Melrose Ave., Los Angeles 46, Calif.

▲ Mention Item NED-5890 when writing ▲



CAMBRIDGE ALLOY FIXTURE

For Salt Bath Heat Treatment followed by Quench

Cambridge specializes in alloy fixtures for carrying metal parts through heat treating, quenching and pickling solutions. Outline your requirements. We will give you detailed drawings and quotations.

THE CAMBRIDGE WIRE CLOTH CO.

CAMBRIDGE 13 CAMBRIDGE, MARYLAND

▲ Mention Item NED-5891 when writing ▲

BATTERY WELDING

Here are the answers to your questions about the most striking new development in resistance welding—making resistance welding useable wherever there is enough power to operate a simple battery charger.

WHAT IT IS . . .
How does it work and why?
WHERE TO USE IT . . .
What kind of welding?
What kind of machines?
How much power?
WHAT ABOUT INSTALLATION? . . .
Portability?
Floor space?
WHAT ABOUT COST? . .
Initial cost?
Operating cost?
Efficiency?
HOW IS IT OPERATED? . . .
How much skill?
What kind of controls?
Safety?
WHAT ABOUT MAINTENANCE? . . .
How much skill required?
Reliability?
Adjustments?

Ask for 12 page booklet (No. 902) "How and Why of Battery Welding"

BUY U. S. WAR BONDS

PROGRESSIVE WELDER CO.

SEAM PROJECTION & BUTT • Electric Welding Equipment • PORTABLE GUN & PENDIN

3050 E. OUTER DRIVE • DETROIT 12, U. S. A.

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TIPS on How to Fabricate WELDED STAINLESS TUBING

Let us send you this series of Carpenter "QUICK FACTS" Bulletins, full of working data and useful information on Stainless Tubing.

In a few minutes time you can pick up many tips on bending, flanging, welding and other operations that will save you man-hours and money.

Send a note on your company letterhead for your series of "QUICK FACTS".

THE CARPENTER STEEL CO.

Welded Tube Division . Kenilworth, N. J.

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SAVE 2 WAYS WITH HALLOWELL

WORK-BENCHES OF STEEL

When you install "HALLOWELL" Work-Benches of Steel, you avoid the cost of building your own. You select from 1367 combinations of READY-MADE BENCHES to meet your exact requirements.

You also eliminate replacement or rebuilding costs. "HALLOWELL" Work-Benches of Steel are practically everlasting and are easily removed from one location to another if occasion demands. Looking forward to post war changes of floor plans, or possible curtailment of space, it will pay you to investigate "HALLOWELL" Work-Benches of Steel as a PERMANENT solution of the work-bench problem.

Fig. 732

Send for further information on "HALLOWELL" Work-Benches of Steel; or suggestions on shop equipment of any kind.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 581

— BRANCHES —

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

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WATER WASH BOOTHS

Eliminate Fire Hazards-Assure Clean Exhaust Conserve Paint-Promote Healthful Working Conditions

A sound, economic investment, these Paasche Booths (based on the principle that *paint can't stick to water*) usually pay for themselves quickly in time and materials saved. Also reduce fire hazards. Write today for full information on Paasche Water Wash Booths and other Manual or Automatic Airpainting Equipment. Paasche Airbrush Co., 1949 Diversey Parkway, Chicago, Illinois.

Paasche Airbrush (Canada) Ltd., 110 Elm St., Toronto

Paasche AIRPAINTING EQUIPMENT

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Exide's
LIGHTGUARD

COMPACT and COMPLETE EMERGENCY LIGHTING UNIT

Despite all precautions of utility companies, disasters beyond their control can plunge war plants, arsenals, power stations, and other vital areas into darkness. Avoid such dangers with an Exide LIGHTGUARD. It stands by for instant, automatic lighting protection.

An Exide LIGHTGUARD is a good investment. Here's why:

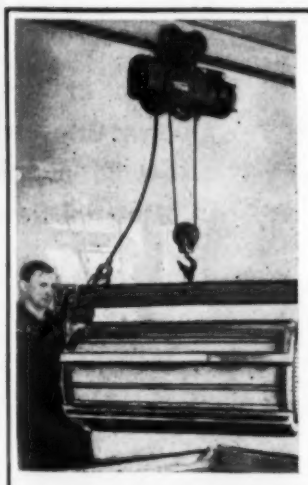
1—No fixtures or wiring needed, except simple cord and plug connection to A. C. supply.
2—Low price.
3—Lights an area of 7500 square feet.
4—Self-contained, automatic operation and charging.
5—Long-life, thick plate Exide Battery. Visible pilot balls.
6—Selenium trickle charger automatically maintains battery charge from ordinary A.C. supply.
7—Can be used as a portable light.

Additional details on this contribution to industrial safety will be supplied upon application to Exide.

Exide EMERGENCY BATTERIES

THE ELECTRIC STORAGE BATTERY COMPANY, Phila., 32
Exide Batteries of Canada, Limited, Toronto

▲ Mention Item NED-5896 when writing ▲



YOU WILL SAVE A LOT OF TIME AND HANDLING COST WITH

Titan ELECTRIC HOISTS

It will cost you less to handle material this fast, modern way with Titan Electric Hoists, and it is safer for both men and material.

The Titan is a compact, light weight, easily moved, easily operated, low cost Electric Hoist with "big hoist" design and safety features.

Inquire about these time and cost savers and ask for Bulletin 805.

DETROIT HOIST & MACHINE CO.
8 06 MORROW ST., • DETROIT 11, MICHIGAN

Detroit HOISTS and CRANES

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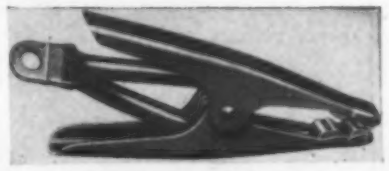
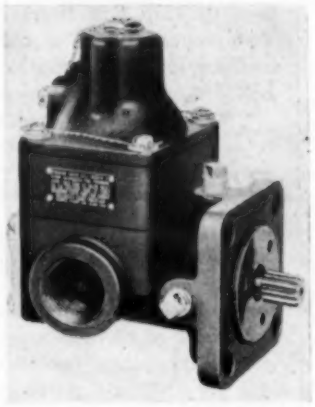
WELDING GROUND CLAMP



Designed so that each jaw connects independently to ground cable, this welding ground clamp assures proper ground connection with either or both jaws carrying rated current. Unit weighs 1½ pounds, has maximum jaw spread of 2½ inches and is rated at 300 amperes. Clamp has processed steel frame with durable copper conductors and contacts. List price is $1.50. Made by **The Lincoln Electric Co.**, Dept. AP-574, 12818 Coit Rd., Cleveland, O.

▲ Mention Item NED-5898 when writing ▲

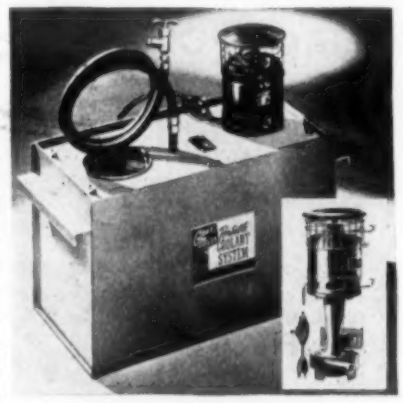
AIRCRAFT FUEL PUMP



Light in weight, this high-pressure engine-driven gasoline pump is designed for aircraft usage but is also adaptable for industrial liquid handling operations. It delivers up to 400 gallons per hour when driven at 2500 revolutions per minute. Pressure range is from 6 to 35 pounds per square inch. Design features include balanced relief valves and low temperature shaft seals. It meets AN-P-52 and AN-P-56 specifications. Made by **Romec Pump Co.**, 110 Abbey Rd., Elyria, O.

▲ Mention Item NED-5899 when writing ▲

PORTABLE COOLANT SYSTEM



Particularly suited for application of coolants to grinders, cut-off saws, milling machines and for operations requiring fine abrasive cutting and honing, model 1130 portable coolant system has flow which is adjustable from trickle to full stream. Unit is ready for immediate plug-in operation and it fits snugly under machine or in any out-of-the-way place. Lubrication points are readily accessible. Forced settling baffle plates in tank reduce circulation of solids.

Centrifugal pump has capacity of 1200 gallons per hour of water at zero head; 560 gallons per hour at 5-foot head. Motor is rated at 1/5 horsepower. Model 1100 pump is also available for in-built coolant systems and as general purpose sump pump. Mounting bracket permits either vertical or horizontal attachment or unit may rest on its base on three legs. Abrasives or chips pass through pump without binding or abrading. Made by **Gray-Mills Co.**, 1948 Ridge Ave., Evanston, Ill.

▲ Mention Item NED-5900 when writing ▲

REMEMBER THIS—FOR BETTER, FASTER TUBE ROLLING

Thousands of Airetool Tube Expanders are in daily service throughout the world. That is because they are easy to use and are made in a variety of sizes and designs to meet every tube expansion and rolling requirement. Every Airetool Expander is constructed from the finest alloy steel—made by expert workmen to do a better job for a longer period of time. Investigate Airetool Tube Expanders without delay—they're tops in design, material and workmanship.

Write for Airetool's New Expander Book

AIRETOOL MANUFACTURING COMPANY

441 Airetool & Yost-Superior Factory Bldgs.
SPRINGFIELD, OHIO

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FEDERAL RESONATING HORN

The Ideal Horn for
★ Fast Code Calls
★ Warning Signals
★ Fire Alarm Service

Write for Bulletin

FEDERAL ELECTRIC CO., Inc.
SIREN HEADQUARTERS
8711 So. State Street Chicago 19, Illinois

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ANOTHER SPECIAL BY PROGRESSIVE

71 other "specials" are illustrated in Catalog 18, which includes tables of weights per 1M standard pieces, dec. equivs. of fractions, etc. Write for it.

Special heads, threads, and finishes — on fastenings of any metal or alloy adapted to cold-upset — are Progressive's specialty. Weekly output: 25,000,000.

The PROGRESSIVE MFG. CO.
46 NORWOOD ST., TORRINGTON, CONN.

★ BUY MORE WAR BONDS ★

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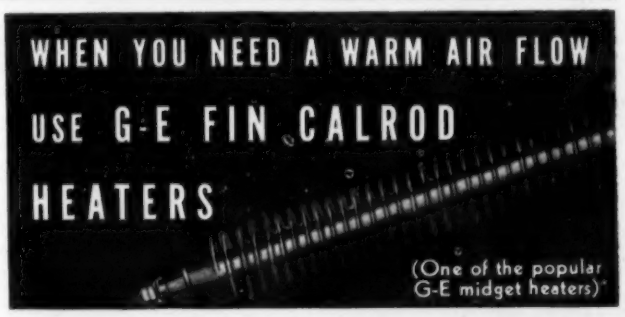
WHEN YOU NEED A WARM AIR FLOW USE G-E FIN CALROD HEATERS



(One of the popular G-E midget heaters)*

Install them in air-conditioning system, drying equipment, recirculating ovens, dehydrating equipment - - - wherever else a clean, warm-air flow is needed. They are made with the standard, durable Calrod construction plus a brazed-on fin to increase radiation. Easy to install. Ratings, from 2000 to 10,000 watts. Straight lengths from 24 to 104 inches, or bent to practically any desired shape. **PRICES FROM $7.40**

SEND FOR GED-650

Here, in this 56-page book, are the answers to hundreds of small heating problems and complete information about G-E midget heaters. For your copy, simply write to General Electric Co., Schenectady 5, N. Y.

*FIN CALROD HEATERS • CALROD HEATERS • CARTRIDGE HEATERS • STRIP HEATERS IMMERSION HEATERS • CONVECTION HEATERS • HEATING CABLE

GENERAL ELECTRIC

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NUTS
SCREWS
RIVETS
BOLTS
CLARK PRODUCTS
PLAY A VITAL PART IN OUR DEFENSE PROGRAMS
Fast on the Assembly line—
Tough where they have to be, and Kind to the hands that handle them.
Send for our latest catalog
1854 — 1944
MILLDALE CLARK BROS BOLT CO. CONN.

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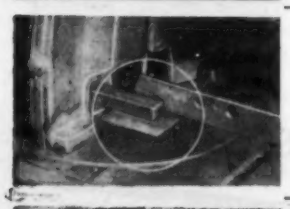
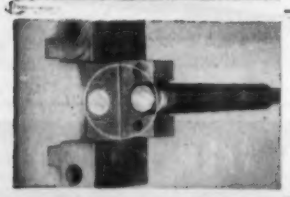
5 CASES WHERE KENNAMETAL INSERTS
Take a licking and like it!

CASE No. 1
Condition: Grinder table had to be resurfaced frequently to maintain true grinding of tool angles.
Correction: Kennametal inserts provide true, flat surfaces that show no appreciable wear after many months' service.

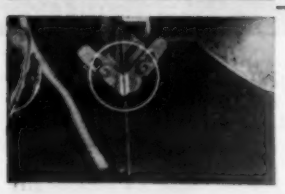


CASE No. 2
Condition: Worn sliding surfaces of abrasive saw rest allowed shank steel to wobble, causing uneven cut-off.
Correction: Inserts of Kennametal make smooth surface that outwears steel up to 100 times.



CASE No. 3
Condition: Steel parts of vise clamping mechanism badly galled by twisting action.
Correction: Kennametal discs, at abutting points, minimize wear; permit jaw to be closed securely, opened readily, with less effort.

CASE No. 4
Condition: Wire cleaning brushes cut deep into steel leveling guides in less than one day.
Correction: Kennametal inserts resist the abrasion . . . after months' service, are still in good shape.



CASE No. 5
Condition: Steel surfaces of band saw guides wore quickly, allowing saw to weave and cause uneven profiling.
Correction: Inserts of wear-resistant Kennametal provide non-galling surfaces that guide the saw straight and true.

WHAT'S YOUR CASE?

If the service life of your products or production machinery is shortened by excessive wear . . . incorporate extremely hard, non-galling Kennametal parts at critical points. Kennametal is available in a variety of standard shapes (balls, discs, flat blanks), and it can be molded into almost any special form, limited only by reasonable proportions. Write for catalog information.

KENNAMETAL
SUPERIOR CEMENTED CARBIDES
KENNAMETAL Inc., LATROBE, PA.

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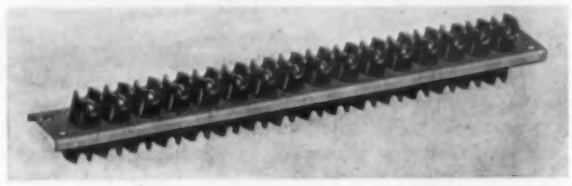
TERMINAL BLOCK

Convenience and wiring simplicity for sub-panel mounting are features of these feed-thru terminal blocks. Terminal block consists of individual feed-thru terminals, molded in

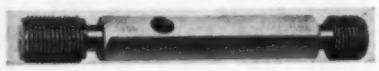


bakelite, which are permanently held in metal strip in any combination desired. Blocks are now available having any number of units between 1 and 16, but they can be supplied with any number of terminals needed.

Terminals have ample clearances and leakage distances for circuits carrying up to 300 volts, 20 amperes. Center-to-center distance between terminal units is ⅝ inch. No. 8 screws are used on each side of terminal units for securing connection. Two mounting holes at each end of terminal base take No. 8 machine screws. Made by Curtis Development & Mfg. Co., 1 N. Crawford Ave., Chicago, Ill.

▲ Mention Item NED-5908 when writing ▲

CARBIDE THREAD PLUG GAGES



Extreme accuracy adapts this line of carbide thread plug gages for inspection work requiring close tolerances. Wear resisting properties of carbide provide maximum life accuracy under production gaging operations. Solid carbide units are available for smaller size gaging members. Larger sizes have carbide bushing fitted over steel body. Size range is from 0.112 to 3 inches. All tools are accurately ground to Class X or Class Y tolerances and any pitch can be supplied in American National form. Made by Jansson Gage Co., 19208 Glendale Ave., Detroit 23, Mich.

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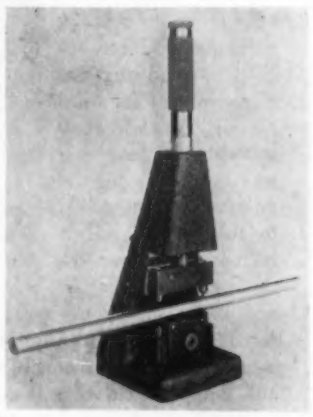
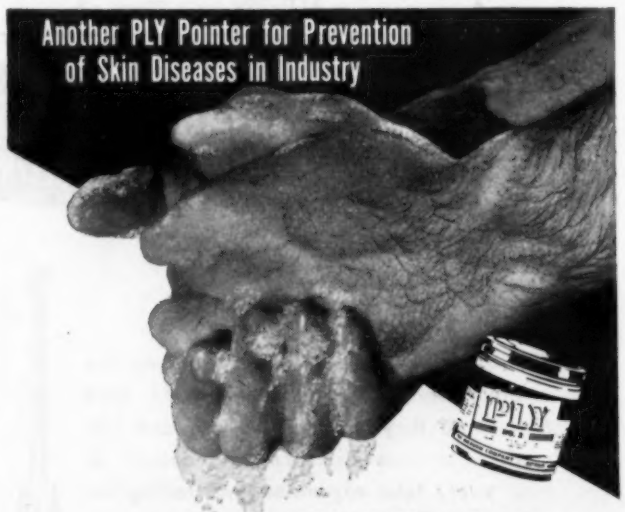
GAGE POINT PUNCH



Marking four uniform centers on specimen with one push of handle, this gage point punch has impact force which is adjustable for different materials. It automatically centers either round or flat specimens. Impact force is applied manually by adjustable detent which eliminates use of hammer.

Upper punch holder, guided in heavy frame, is attached to handle. Entire upper punch point assembly is spring supported to keep gap between punch points open for largest specimen. Upper handle is pushed down until all punch points rest on specimen. Continued push brings to pre-adjusted compression a second spring within tubular knurled handle, releasing potential energy to produce impact on specimen. Made by The Baldwin Locomotive Works, 942 Chester Pike, Eddystone, Pa.

▲ Mention Item NED-5910 when writing ▲



THE LOW-DOWN ON LATHER!
In addition to providing positive protection—with a different PLY formula for each general group of hazards—PLY makes the dirtiest hands come clean in plain water . . . because of the abundant lather (neutral pH) that carries away all foreign substances. PLY-protected hands feel cleaner, look cleaner, are cleaner . . . without harsh soaps or irritating cleansers. No wonder both men and women workers prefer PLY for prevention of industrial dermatitis!

THE MILBURN COMPANY
Pioneers of Skin Protection in Industry
3246 E. Woodbridge • Detroit 7, Michigan

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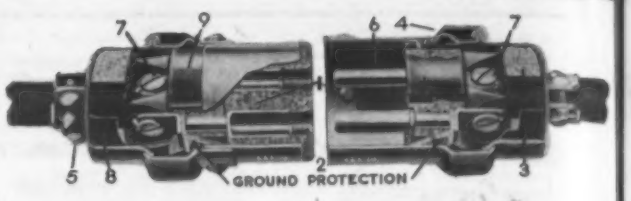

EVER-LOK
RECEPTACLES, CONNECTORS, AND PLUGS

1. Automatic Locking is positive — no chance of faulty contact. A twist of plug shell permits instant unlocking.
2. Positive Grounding provides maximum protection to personnel and equipment.
3. Dust-proof — to exclude metal particles, dust, etc.
4. Steel-Clad — Provides maximum protection. Light in weight, yet sturdy.
5. Cord Grip — Adjustable for wide range of cable sizes. Prevents strains on connections and protects cable.
6. Contacts are machined, self-wiping and self-aligning.
7. Unit Assembly—Housing assembly plus interior assembly—easy wiring.
8. Caps fibre-lined to prevent stray wire ends touching the shell.
9. Interiors—molded bakelite.
10. Polarized—Plugs cannot be inserted the wrong way.

Available in 2, 3, and 4 pole, 10 to 200 amperes and 2 to 11 pole for signal and control service.

Since 1902
RUSSELL & STOLL COMPANY
EXPLOSION-PROOF WATER-TIGHT AND EVER-LOK RECEPTACLES, PLUGS, CONNECTORS, SWITCHES AND FIXTURES
125 BARCLAY STREET • NEW YORK 7, N. Y.

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For set screw security you can depend on
CLEVELAND SET SCREWS
Made to close tolerances of thread fit and lead — carefully case hardened — high tensile strength. All points, all sizes. Write for samples and prices.

CLEVELAND FASTENERS
THE CLEVELAND CAP SCREW COMPANY
2917 EAST 79TH STREET • CLEVELAND 4, OHIO
Warehouses: Chicago, Philadelphia, New York, Los Angeles

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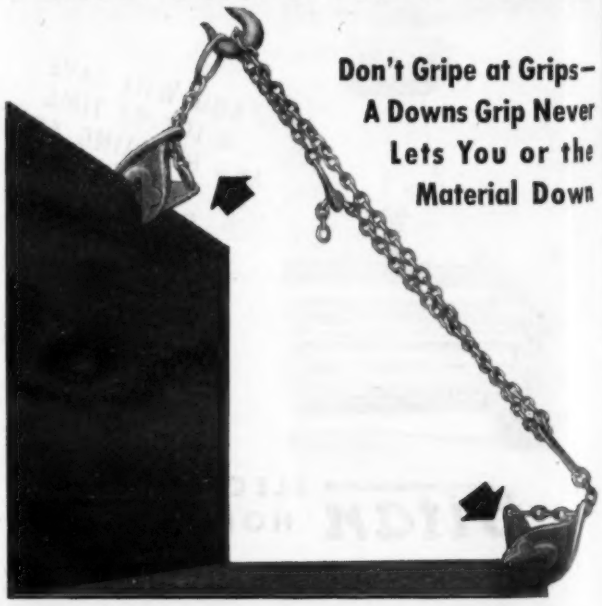
PLATE GRIPS THAT HOLD



Downs Safety Plate Grips will hold with a positive grip in any position. Ideal for lifting or laying material in a horizontal position or for turning plates over without the slightest danger of the grip letting go. Will not damage finished surfaces—easily operated by one man. Available for various plate thicknesses up to 6" and ½ to 10 ton capacities. Write today for illustrated folder No. 380.

DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS
540 West Vernon Ave. • Los Angeles 37, Calif.

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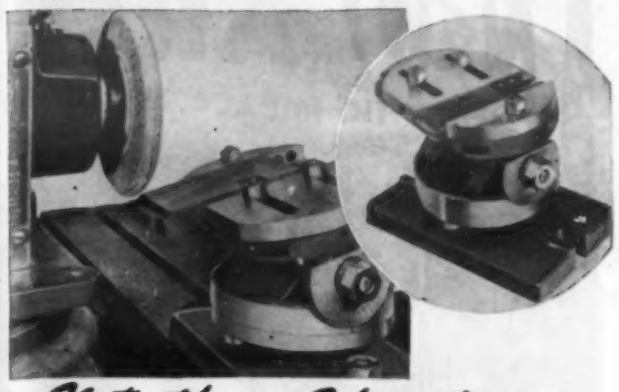
OSTER CHASER GRINDER FIXTURE



Note these Advantages

Easily mounted on table of any conventional tool and grinding machine. Adjustable for any throat or rake angle desired. Holds all sizes, makes, and types of dies or chasers. Protects dies and chasers from faulty grinding. Encourages more frequent grinding. Avoids possibility of re-threading pipe and bolts often ruined by threading with dull chasers. PRICE COMPLETE: $85.00 F.O.B. Cleveland, Ohio, U. S. A. Catalog "List No. 28" sent on request.

THE OSTER MANUFACTURING COMPANY
2066 EAST 61st ST., CLEVELAND 3, OHIO, U. S. A.

OSTER *Cuts Your Costs!*

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PRINT your weights

STOP ERRORS START COST RECORDS *RIGHT*

Bridging the gap between weighing and bookkeeping ...TOLEDO PRINTWEIGH gives you indisputably *accurate printed records* of each weighing operation.

Simple—even with green help, long hours, greater fatigue and wartime speed—PRINTWEIGH *keeps weight records straight.*

Rapid—puts accurate, printed weight records in the operator's hand with *split-second speed!*

Dependable—prints BIG figures... *unmistakably big*... on thick tickets... on large or small sheets... on strips... with extra copies.

Accurate—backed by more than 20 years of Toledo Research and Engineering in weight-printing. Thoroughly proved throughout industry, Printweigh is adaptable to scores of weighing operations. Toledo Scale Company, Toledo, Ohio... Sales and Service in 181 cities.

TOLEDO PRINTWEIGH SCALES

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PLASTIC TUBING COUPLING

No flaring tools are required for installation of this coupling for plastic tubing. Flare is formed as members of fitting are screwed together in one simple operation. Design assures uniform walled flare, with no thinning at end to weaken tube. Union effect eliminates twisting and distortion of tube, as well as splitting of ends. Available sizes are for tubes from ¼ to ¾ inch in outside diameter. Made by **Packless Metal Products Corp.**, 31 Winthrop Ave., New Rochelle, N. Y.

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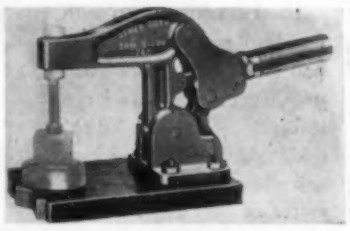
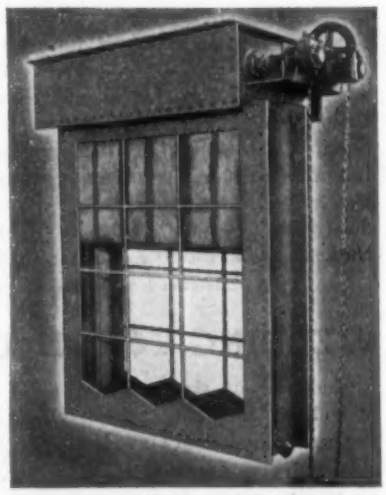
WORK-HOLDING CLAMP



Made in three types for heavy, medium and light duty applications, Cam-O-Lok clamp is adjustable over entire range of its vertical holding capacity. No adjustment of hold-down bolt is necessary when objects vary in thickness. Locking and unlocking are accomplished by means of threaded element in positioning handle. Lubrication is provided for threads. Clamps are compact so that they may be used in assembly and holding fixtures where space is limited. Made by **Mechanics Engineering Co.**, Box 243, Jackson, Mich.

▲ Mention Item NED-5918 when writing ▲

REVERSE FLOW DAMPER



Employing two curtains for regulating gas flow in either direction, type DVHR Heacon damper provides by-pass control. Curtains are tied together mechanically so as to operate simultaneously. This permits flow in either direction regardless of damper position.

With damper of this type in natural draft by-pass around fans, or in heat or dust regulator equipment, many of difficulties normally encountered are eliminated. It provides complete isolation of equipment for maintenance purposes. Elimination of recirculation gives increased capacity and heat absorption, thereby reducing maintenance of equipment under control. Banking losses are reduced and accurate regulation of natural draft is obtained. Damper is also used in cross-over air ducts between forced draft fans. Made by **Thermix Engr. Co.**, Greenwich, Conn.

▲ Mention Item NED-5919 when writing ▲

Hammond OF KALAMAZOO NO-DUST GRINDERS

ECONOMIZE, SAVE SPACE • PRODUCE MORE • PROTECT EMPLOYEES

Rear View Door Removed Showing The Filters

3 POPULAR MODELS FOR 10", 12" and 14" WHEELS
Completely Self Contained Grinder and Dust Collector Unit All-In-One

WRITE FOR BULLETIN 102

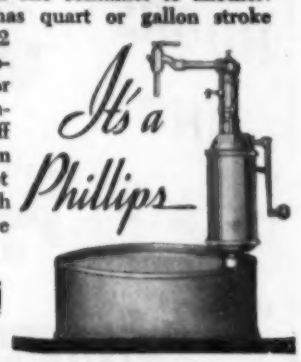
Hammond Machinery Builders INC.
KALAMAZOO 54, MICHIGAN
1623 Douglas Avenue • Eastern Branch—71 West 23rd St., New York 10, N. Y.

▲ Mention Item NED-5920 when writing ▲

HOW TO STORE AND DISPENSE LIQUIDS Economically—

CONVERT YOUR CONTAINER TO A DISPENSER WITH A PHILLIPS BARREL PUMP!

YES, your original container can be converted to a dispenser as well as a storage tank—saving time, money and material—with the aid of a Phillips Hand Operated Barrel Pump. One man can easily shift this light, compact pump from one container to another. Model 174, illustrated, has quart or gallon stroke measuring pump or 12 G.P.M. non-measuring rotary pump. Threaded for 1½" and 2" drum openings. Cast iron shutoff nozzle. Adjustable suction with built-in brass foot valve. Also furnished with self-contained portable tank units.



DEPENDABLE PHILLIPS SERVICE STATION EQUIPMENT

PHILLIPS PUMP AND TANK CO.
5004 Brotherton Road, Cincinnati 9, Ohio

▲ Mention Item NED-5921 when writing ▲

NEW CLIPPER SEALS

For Post-War Use

TO meet specialized wartime requirements, Johns-Manville has developed a number of new designs in bearing protectors. These new Clipper Seals protect bearings in two ways:

1. by keeping bearing lubrication from leaking out and
2. by preventing abrasive or corrosive materials from getting in.

These new Clipper Seals are not now available because of wartime demands. However, Johns-Manville engineers will welcome an opportunity to consult with you on any bearing protection problems you may have in connection with post-war requirements.

Write Johns-Manville, 22 East 40th Street, New York 16, N. Y.

JM JOHNS-MANVILLE PACKINGS & GASKETS

▲ Mention Item NED-5922 when writing ▲

GET THESE FACTS ABOUT CRANES!

Valuable Free Bulletin tells you the very things you want to know

... construction and mechanism of cranes, specialized and general installations, tables, diagrams, and other useful information.

MAIL THE COUPON TODAY!

ROBBINS & MYERS • Inc.
HOIST & CRANE DIVISION • SPRINGFIELD, OHIO

Please send the new 16-page R & M Crane Bulletin No. 825 NED

Name..... *Position*.....
Firm.....
St. Address..... *City & State*.....

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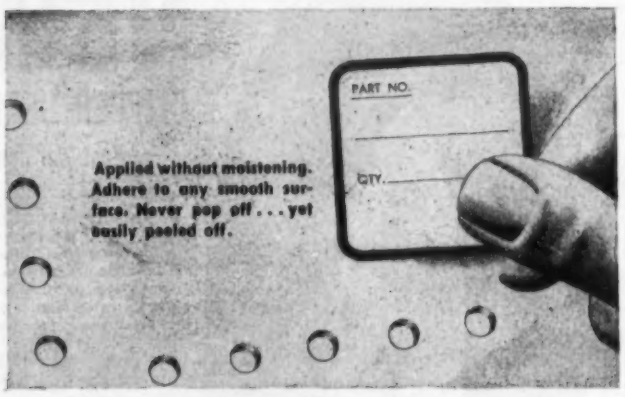
354 EIGHTH AVE. SOUTH, MINNEAPOLIS 15, MINN.

▲ Mention Item NED-5924 when writing ▲

NEW REMOVABLE STICKERS



FAIRCHILD FINDS THEM FASTER TO USE . . . QUICK TO APPLY . . . EASY TO REMOVE

Kum-Kleen stickers, with the magic adhesive backing, are applied without moistening, adhere to any smooth surface including metal, glass, plastic, and wood . . . never fall off . . . yet are easily peeled off when ther job is done.

Try them as Inspection, Rejection, and Identification stickers.

Write today for samples and the booklet explaining their wide use in war industries.

AVERY *Kum-Kleen* PRODUCTION STICKERS

Write Dept. NED-10

AVERY ADHESIVES: 451 East 3rd St., Los Angeles 13

New York, Boston, Detroit, Pittsburgh, Chicago, Kansas City, Mo. In Canada. Enterprise Sales, Toronto.

▲ Mention Item NED-5925 when writing ▲

YOU CAN'T BEAT THIS SCREWDRIVER

24 Hour Production Schedules Maintained

THINK OF IT

Drives No. 2, 4 or 6 screws, from 3/16" to 3/4" long, at one second each.

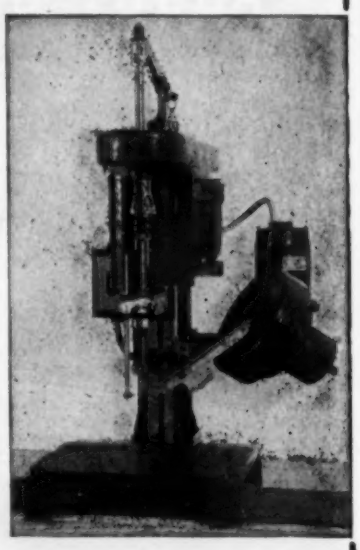
•

ALL SCREWS DRIVEN TO A UNIFORM TENSION

No Marring of Heads

•

Send Sample Assemblies For Estimates.

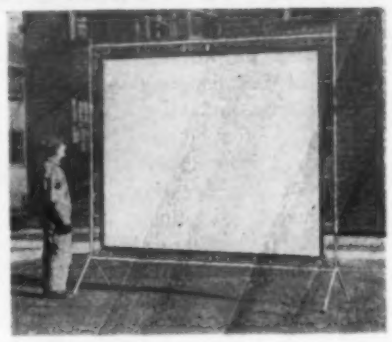


DETROIT POWER SCREWDRIVER CO.

2819 West Fort Street Detroit 16, Michigan

▲ Mention Item NED-5926 when writing ▲

FOLDING PROJECTION SCREEN



Available in sizes from 7 x 9 feet to 20 x 20 feet, Fold-Pak folding projection screens are adaptable for either indoor or outdoor use. Made of durable, flexible fabric, these screens are equipped with metal grommets attached in reinforced webbing around edges. Fabric will withstand rolling, folding, washing, creasing and weathering without peeling or cracking. It can be hung up or stretched on special steel frame as shown. Made by **Radiant Mfg. Corp.**, 1141 W. Superior St., Chicago 22, Ill.

▲ Mention Item NED-5927 when writing ▲

DUST COLLECTOR

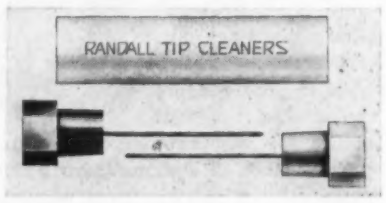
Used in conjunction with standard model 600 Dustkop dust collectors, this pre-cleaner unit has large storage space for dust, dirt, shavings, lint and saw dust. It thus greatly increases effective capacity of dust collector for woodworking, grinding, polishing and similar operations. It can be supplied with self-contained power unit as shown, or as pre-cleaning unit for regular dust collector equipment.

Inlet flange of pre-cleaner unit is connected to outlet of dust source and Dustkop collector is placed on top of it. Connection between cleaner and dust collector is made with sheet metal pipe which is furnished with unit.

Pre-cleaner consists of cabinet containing large, easily removed dust storage bin and cylindrical centrifugal separator. Inlet flanges can be supplied with single or double sleeve for 5 and 3-inch connections, respectively. Practically all sawdust, lint, shavings and larger dust particles are removed by pre-cleaner and fine particles are removed by spun glass filter of dust collector unit. Made by **Aget-Detroit Co.**, 602 First National Bank Bldg., Ann Arbor, Mich.

▲ Mention Item NED-5928 when writing ▲

WELDING TORCH TIP CLEANER



Made in any size to fit welding and cutting torches, Randall tip cleaners are enclosed in plastic cases, each with size clearly marked on its end. Hexagonal shaped holder acts as handle and facilitates use of tool. Sets of two sizes are available for cutting torches and one size is packaged for welding torches. Made by **Welding & Cutting Materials Co.**, 400 E. Eighteenth St., Kansas City 8, Mo.

▲ Mention Item NED-5929 when writing ▲

VOLUME PRODUCTION to meet the Growing Demands of War and Industry for

WISCONSIN *Air-Cooled* ENGINES

Highly systematized, progressive assembly of Wisconsin heavy-duty air-cooled engines keeps them coming off the production line in a steady, uninterrupted stream. Every operation is handled by a thoroughly trained workman who performs his specialized job with speed and skill.

The picture shows a run of Model VE-4, V-type, 4-cylinder engines going through . . . for power destinations on many types of equipment. Perhaps one of these heavy-duty engines has been reserved for service on your equipment.

Most H.P. per pound **WISCONSIN MOTOR** Corporation

MILWAUKEE 14, WISCONSIN, U. S. A.

World's Largest Builders of Heavy-Duty Air-Cooled Engines

▲ Mention Item NED-5930 when writing ▲

● This new ARO Model 131 Reversible Impact Wrench says "when" automatically—it's the *only* impact wrench with Controlled Torque!

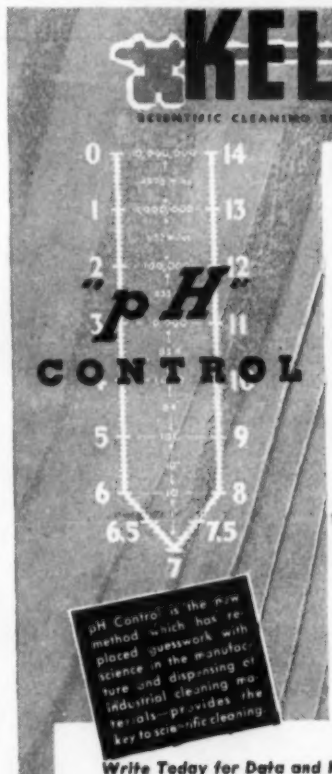
Specially designed to increase the speed and accuracy of nut and bolt setting operations up to 3/8" size...sets bolts and nuts without danger of stretching or "burning".

The simple *impact roller clutch mechanism has only 4 parts* and is so constructed that when predetermined torque is reached, the rollers rebound out of engagement with the hammer, thus avoiding any chance of stretching the bolt. Operator controls torque by merely turning calibrated adjusting screw. Write today for Aro Pneumatic Tool Catalog No. 44.

THE ARO EQUIPMENT CORPORATION, BRYAN, OHIO

▲ Mention Item NED-5931 when writing ▲

KELITE SCIENTIFIC CLEANING THROUGH pH CONTROL



KELITE SCALE-OFF *DISSOLVES* RUST and SCALE

KELITE SCALE-OFF is a new rust and scale remover for water jackets, steam and cooling coils, boilers and steam pressure cleaning machines. Quick-acting KELITE SCALE-OFF immediately attacks and removes scale and rust, but its action is inhibited so that no etching occurs on healthy metal. Also extensively used in pickling, KELITE SCALE-OFF is fast-acting . . . efficient . . . safe to use.

Write Today for Data and Prices on KELITE SCALE-OFF

KELITE PRODUCTS, INC.

909 EAST 60TH ST. • LOS ANGELES 1, CALIF.

Manufacturing plants in Los Angeles, Chicago, Perth Amboy, Houston. . . . Branches in principal cities.

Copyright 1944, Kelite Products, Inc.

▲ Mention Item NED-5932 when writing ▲

"Must"—The Eye Opener

What we "just had to do" in designs and constructions of Audubon Metalwove Belts in order to satisfy various war industries, opened our eyes to many peacetime applications that we had never touched before. And the wartime "musts" of reliability and long life, opened our eyes to new belt specifications, which give more hours of service per dollar of cost than we ever thought possible in pre-war days. Let us put this new knowledge and experience into your post-war re-conversion plans of continuous conveying, processing, assembling, etc. Let us work with you now, so that you'll be ready to go ahead when the time comes.

AUDUBON WIRE CLOTH CORPORATION

Subsidiary of Manganese Steel Forge Co.

2803 CASTOR AVE., PHILADELPHIA, PA.

▲ Mention Item NED-5933 when writing ▲

COMPRESSED AIR DRIED TO *BELOW* ZERO DEWPOINTS

- For instrument lines
- For process work
- For inspection and assembly departments

ARMY E NAVY

Kemp Adsorptive Dryers are the standard in modern industrial applications. For Bulletin T 25 C write **The C. M. Kemp Mfg. Co., 405 East Oliver Street, Baltimore 2, Maryland.**

KEMP of BALTIMORE

▲ Mention Item NED-5934 when writing ▲

SPOTS Cars... Bends Pipe... Pulls Flasks, Cars, Reels, etc.

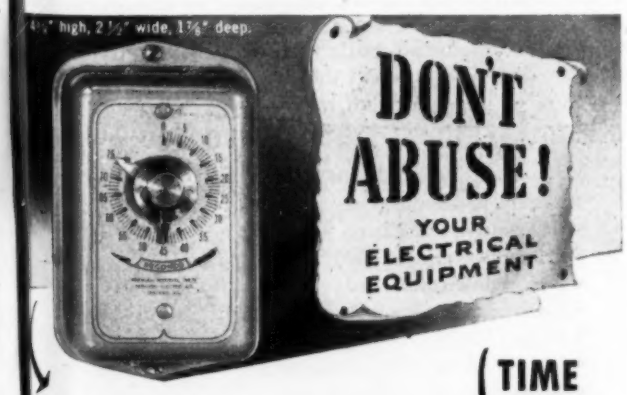
All kinds of back-breaking jobs done quickly, easily with LINK-BELT *Electric* CAR SPOTTER

stationary or portable models . .

● Save time, manpower, with Link-Belt electric Car Spotter. Thousands are in daily use for all kinds of back-breaking jobs in all kinds of industries. A paper mill uses one to swing blow pipe from digester to seven diffusers arranged in circle around digester. Cars loaded with steel castings are handled by transfer cars equipped with L-B Car Spotters. Railroads, foundries, shipyards, docks. Nos. 5 and 10, with integral or separate 5 or 10 h.p. motors, 5000 and 10,000-pound rope pull at 45 ft. per minute—stationary or portable models. Write for Booklet No. 1992.

LINK-BELT COMPANY
2410 W. 18th Street, Chicago 8, Ill. 9980

▲ Mention Item NED-5935 when writing ▲



PROTECT IT WITH ***Paragon*** { TIME DELAY RELAYS

NOTHING is more vital to the war production program than electrical equipment. Guard it with Paragon automatically reset, synchronous motor operated 800 series time delay relays, which:

1. Protect rectifiers and tube filaments from application of plate current before filaments are preheated.
2. Accurately control the various steps of motor acceleration.
3. Dependably delay the closure of elevator control circuits.
4. Stagger the closure of multiple circuit systems so that full load will not be applied at start.

Accuracy of the time cycle and operation of the timer not affected by changes in ambient temperature or vibration. Designed for panelboard mounting or may be mounted to standard handy box or single gang switch box.

PARAGON ELECTRIC CO.
CHICAGO 5, ILLINOIS

Paragon Chicago
BUILDERS OF ELECTRICAL EQUIPMENT SINCE 1905

▲ Mention Item NED-5936 when writing ▲

SMALL HYDRAULIC PRESS

Operated with minimum of physical effort, Corsair air-hydraulic, gap type press affords pressures of up to 1¾ tons. To operate, hand or foot control is pushed down. Ram travels preset stroke of 1/32 to 2½ inches and delivers preselected pressure to work. When operator releases control, ram retracts automatically. Air cylinder and hydraulic pump units are built into press body, but are readily accessible and removable. Machine may be used for stamping, riveting, assembling, forming, punching and other operations. Smaller models are available. Made by **Studebaker Machine Co.**, 1221 S. Ninth St., Maywood, Ill.

▲ Mention Item NED-5937 when writing ▲

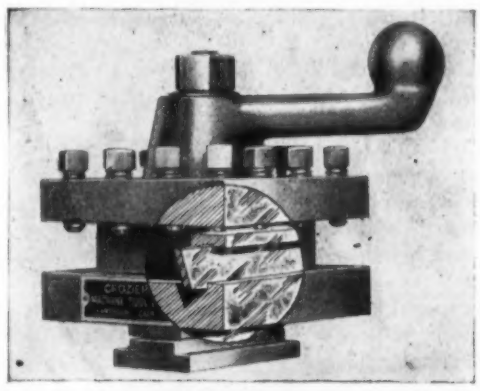
COUNTERSINK GAGE

Checking of countersinks as to size and shape for grinding, sharpening and finished screw adapters is readily performed with this countersink gage. Five different countersink angles are included, with two profiles for each size. Gage is standard for both grinding and machine countersinks. Available free from **Dayton Rogers Mfg. Co.**, 2837 Twelfth Ave. S., Minneapolis 7, Minn.

▲ Mention Item NED-5938 when writing ▲

TOOL POST TURRET

Especially adapted for cut-off operations, this tool post turret for bench lathes is of improved design. One side of block is channeled to receive standard beveled section cut-off blade



which is supported at top by hardened, channeled bar to give maximum bearing surface for locking bolts. Blade is quickly and positively centered and held in vertical position. Complete rigidity is assured for chatterless operation. Fast, accurate indexing is feature of turret which is available for small, medium and large lathes. Made by **Crozier Machine Tool Co.**, Prairie at 118th St., Hawthorne, Calif.

▲ Mention Item NED-5939 when writing ▲

EDMONT GLOVES
WON'T SNAG OR TEAR
ON THE ROUGHEST JOBS
ACID --, CAUSTIC --, AND OIL PROOF
COMFORTABLE ON HANDS

QUICKLY OFF-ON
LIQUID PROOF OIL PROOF
SNAG PROOF ACID PROOF
LONG WEAR
DIRT PROOF

Special synthetic coating, compounded for extra toughness, assures long wear. Reinforced by fabric lining that cushions hands and absorbs perspiration. Write for further information and samples.

Edmont
TRADE MARK REG. U.S. PAT. OFF.
503 ORANGE ST. COSHOCTON, OHIO
SPECIALIST IN RUBBERIZED GLOVES

▲ Mention Item NED-5940 when writing ▲

Precision **ELECTRIC ETCHING** *by Machine*

NEW METHOD OVERCOMES Problem of METAL FATIGUE
Any Mark Whatsoever on surfaces under high stress may be a starting point for fatigue; scratches growing into fissures or fractures. The New Gorton Method of Etching produces NO stress or strain. Get details in Etcher Bulletin.
Free SAMPLE Write today for actual sample from machine.

MARK HARDENED PARTS Without Burr in Finished State!

ON HIGHLY POLISHED or GROUND SURFACES . . . Flat or Curved . . .
For light or deep etching of *ALL KINDS* of metal work, ANY SIZE up to maximum holding capacity of machine. Ideal for marking delicate .0015" Feeler Gage stock, goods in finished state, etc.
Produces PRECISE, CLEAN, PERMANENT ETCH of exceptional accuracy—perfect legibility.

Reproduce pantographically from enlarged model, copy or template.
SINGLE or MULTIPLE HEADS Portable Etcher Unit or complete Etching Machine Available.
Send for complete data in Gorton Etcher Bulletin.

Specialists for 50 YEARS in "Tracer-Controlled" Milling

GEORGE GORTON MACHINE CO.
1103 13TH STREET, RACINE, WISCONSIN, U. S. A.

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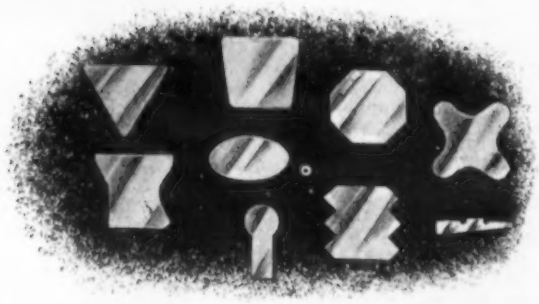
PAGE *Shaped* WIRE



SHAPED wire belongs in production that is coming with reconversion—belongs as never before.

The Shaped Wire you plan to use may be Carbon Steel, Armco Ingot Iron or Stainless Steel. Whatever it may be, think of **PAGE**—for wire has always been the business of PAGE. And it has been part of our business to develop Shaped Wires to meet a wide range of special manufacturing requirements—in end section areas up to .250" square and widths up to ⅜ inches.

• • •

You will find it very much worth your while to discuss your planned use of Shaped Wire with PAGE possibly well in advance of the time of re-conversion. We may be able to help you save many precious production hours and reduce production costs.

PAGE STEEL AND WIRE DIVISION
Monessen, Pa., Atlanta, Chicago, Denver, Los Angeles
New York, Pittsburgh, Portland, San Francisco

In Business for Your Safety
ACCO
AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

▲ Mention Item NED-5942 when writing ▲

SLY

BLAST-CLEANING EQUIPMENT

THE above illustration shows one of many different types and sizes of Sly Blast-Cleaning (Sandblast) Equipment.

What is your problem?

Our experience with thousands of installations is yours for the asking.

SLY THE W. W. SLY MFG. CO.
4748 TRAIN AVE., CLEVELAND 2, OHIO
INDUSTRIAL DUST CONTROL

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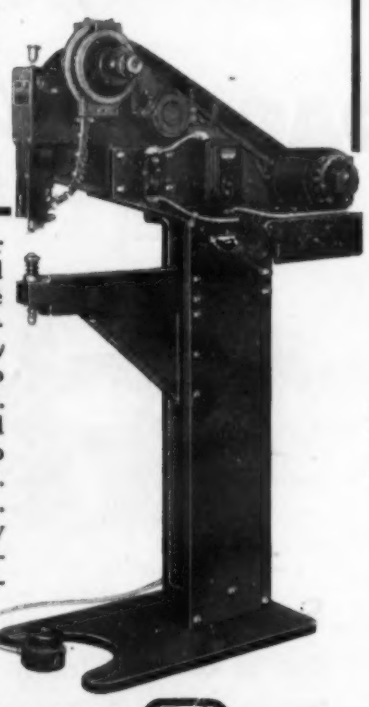
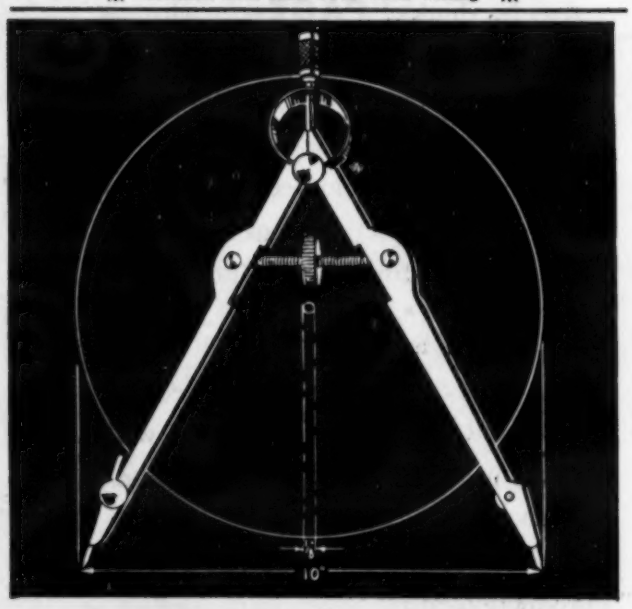
Speed YOUR RIVETING



● Do a better, faster job of riveting—and cut costs—with the T-J RIVITOR! *Rapidly and automatically* feeds and sets $\frac{1}{16}$" to $\frac{3}{16}$" solid steel rivets. Ideal for unskilled operators. Up to 36" throat depths. Uses standard rivets. Adaptable to many jobs. Write for bulletin. The Tomkins-Johnson Co., Jackson, Michigan.

FOR TOUGH JOBS...SPECIFY T-J
TOMKINS-JOHNSON
RIVITORS

▲ Mention Item NED-5945 when writing ▲



with One Vemco Compass

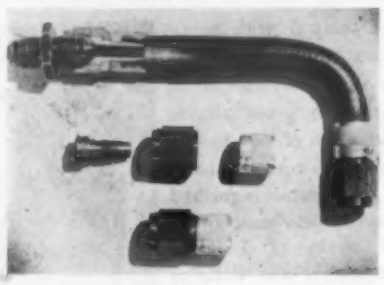
From ⅛" to 10", this large VEMCO Bow Pencil Compass will draw light or dense circles in pencil on paper, wood, or metal. Open truss design makes possible a reduction of 40% in the weight of this VEMCO over older types.

VEMCO instruments are available singly or in sets. See your dealer or write direct.

V & E MANUFACTURING CO.
PASADENA • CALIFORNIA

▲ Mention Item NED-5946 when writing ▲

DETACHABLE HOSE FITTING

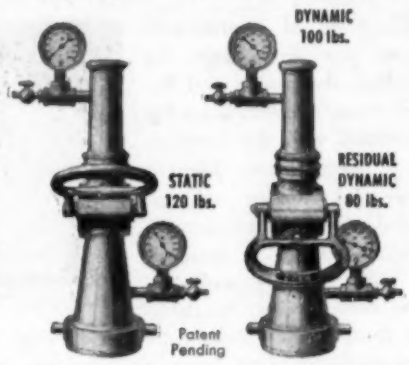


Complying with AN specifications, this line of detachable, reusable hose fittings is designed for use with low pressure hose. Lines can be made up or replaced by untrained personnel without special tools. All parts of assembly are removable and reusable, thus eliminating need for stocking of complete assemblies. No nipple or stem projects from socket so that small bending radius is possible. Made by **Aeroquip Corp.**, Jackson, Mich.

▲ Mention Item NED-5947 when writing ▲

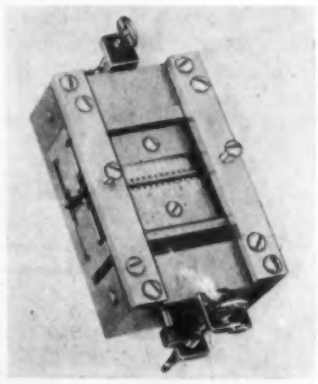
WATER PRESSURE TEST PIPE

Water pressure in pipe lines, hydrants, faucets, pumpers and other locations where proper pressure is essential factor is readily determined with this line of Dyna-Stat hydrostatic-dynamic pressure test pipes. Power of water stream in motion is obtained to provide accurate picture of state of water supply. According to manufacturer, static pressure recordings at water outlets do not give true indication of delivery. These safety devices are made in five sizes for testing fire hydrants and other water outlets. Made by **Vulco Products Co.**, 409 W. Thirty-sixth St., New York 18, N. Y.



▲ Mention Item NED-5948 when writing ▲

COMPRESSION TEST JIG

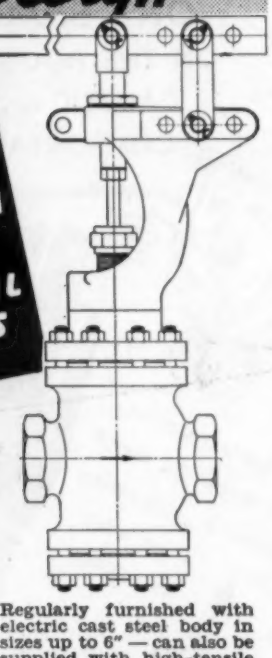


Determination of compression yield strength in aircraft design is simplified with Montgomery-Templin jig. Common practice has been to obtain values for compression yield in sheet metal by testing sheets in packs. Sheets were piled to thickness equal to width of test sheet, and pack was then supported by needle points held in special fixture. With this new jig it is possible to test single thickness of sheet in compression, supporting sheet in jig as shown in illustration with multiplicity of small rollers. Extensometers are attached to edges of sheet. Testing of material in single sheet form simplifies technique of testing. Jig is also said to offer possibilities in plastics as well as metals. Made by **The Baldwin Locomotive Works**, Southwark Div., 942 Chester Pike, Eddystone, Pa.

▲ Mention Item NED-5949 when writing ▲

Improved LEVER VALVE Design

PROVIDES
1 ADDED TOPWORK STRENGTH
2 POSITIVE STEM GUIDING
3 VALVE TRAVEL ADJUSTMENTS



Fisher's NEW Type 7B lever valve is particularly recommended for installations where heavy duty operating devices are employed. Sturdy built high-tensile iron yoke incorporates positive guide for valve stem with bronze bushings — stainless steel link pins ground and polished — adjustment for various valve travels—steel lever.

Regularly furnished with electric cast steel body in sizes up to 6" — can also be supplied with high-tensile iron body where required.

FISHER GOVERNOR COMPANY
1430 Fisher Bldg., MARSHALLTOWN, IOWA

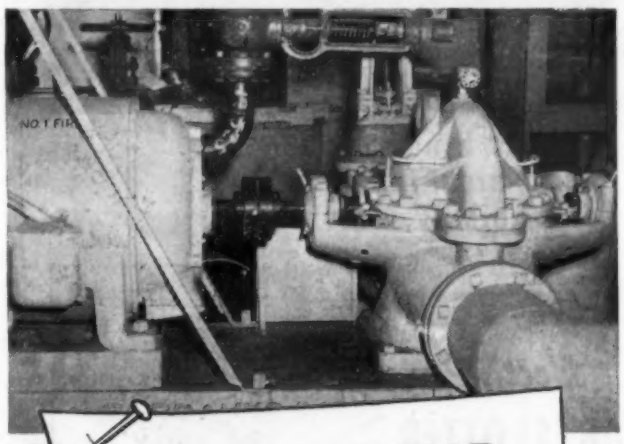
▲ Mention Item NED-5950 when writing ▲

FOR FULL PRODUCTION NOW... AND RECONVERSION

Install Hartzell fans or blowers now to whip any industrial air-movement problem — excessive heat — dangerous fume concentrations — slow cooling or drying. They'll do the job, and do it economically. And because they are built for long industrial life they'll be ready for any use when reconversion hits. Easy to install, to move and to get into action, and good-as-new for years and years, they'll get you more production with less equipment *now* . . . and *after reconversion.*

Hartzell
PROPELLER FAN CO.
DIVISION OF CASTLE HILLS CORP., PIQUA, OHIO
VENTILATION HEADQUARTERS
SALES-ENGINEERING OFFICES IN PRINCIPAL CITIES

▲ Mention Item NED-5951 when writing ▲



Where a PUMP Stands Guard over NAVAL ORDNANCE

WORKING as a part of the fire-prevention system at one of the Navy's new ordnance plants, is this Fairbanks-Morse pumping unit which employs a six-inch (Figure 5814F) fire pump driven by a 75-hp. (Type QSZS) splash-proof motor.

Obviously the importance of any equipment used in such a vital part of our war effort calls for utmost dependability. The assurance of that factor is in the features designed and built into every piece of Fairbanks-Morse equipment that leaves the factory.

Fairbanks-Morse Pumps Give You—

- Sound and Practical Design
- Rugged and Simple Construction
- Inexpensive Installation
- Economical Operation
- Low Maintenance Cost
- Reliable and Efficient Performance
- Longer Life
- Adaptability to All Conditions
- Steady Flow at Uniform Pressure
- Reliable Engineering Service
- Standardized Parts Replacement
- Quality Control
- Protective Guarantee
- Purchase of Complete Unit from One Responsible Manufacturer

If you have pumping problems now, or if you are planning ahead . . . our engineers can help you as they are helping so many others. There is no obligation. Write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY WAR BONDS

FAIRBANKS-MORSE
DIESEL ENGINES · PUMPS · MOTORS · GENERATORS · RAILROAD EQUIPMENT · WATER SYSTEMS · SCALES · STOKERS · FARM EQUIPMENT
Pumps

▲ Mention Item NED-5952 when writing ▲

They're built right, designed right, by an organization of long experience. Prompt delivery from stock.

* * *

Get full information on Congress Standardized Drives—V-Belt Pulleys, Flexible Couplings and Variable Speed.

CATALOG ON REQUEST

CONGRESS DIE CASTING DIV.
CONGRESS TOOL & DIE CO.
ESTABLISHED 1914
3750 E. Outer Drive Detroit 12, Mich.

▲ Mention Item NED-5953 when writing ▲

PLANNED MATERIALS HANDLING goes hand in hand with PLANNED PRODUCTION

LET'S complete the program of making skilled workers of the remaining "unskilled".
—Let's do it NOW!
—Thereby reducing our cost and leading the way in the postwar world.

This Clark Fork Truck and it's operator release ten men for productive work.

"Unskilled labor adds nothing to a product except cost."

CLARK TRUCTRACTOR
BATTLE CREEK, MICHIGAN, U.S.A.

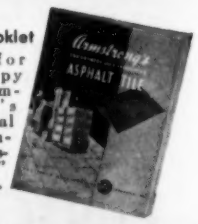
▲ Mention Item NED-5954 when writing ▲

... Cuts Dust Explosion Hazards

THE hazard of dust explosions is minimized with non-sparking Armstrong's Industrial Asphalt Tile. Durable and economical, it is highly resistant to indentation—smooth for fast trucking.

Make This Free Test—We'll apply 100 sq. ft. free for installation in whatever area of your plant you choose. Prove to yourself the many advantages of Industrial Asphalt Tile. Write Armstrong Cork Co., Resilient Tile Floors Dept., 810 New St., Lancaster, Pa.

Free Booklet
Write for your copy of "Armstrong's Industrial and Conductive Asphalt Tile"—it's free.

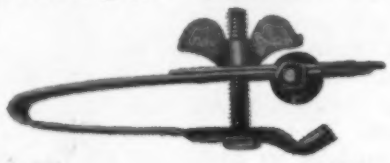


ARMSTRONG'S INDUSTRIAL ASPHALT TILE

▲ Mention Item NED-5955 when writing ▲

TUBE CUTTER

Handling all tubes as well as copper, brass or lead pipe from ⅝ to 1 inch in diameter, No. T-130 self feeding tube cutter does swift, precise cutting job. After tube is inserted in cutter and tightened it does not have to be reset. Tension in frame automatically gives deeper cut on each turn until tube is severed.



Length of tool is 5¼ inches; it weighs 6 ounces. Priority rating of AA-5 or better is required for purchase of tool. This model supplements T-120 cutter which handles tubes from ⅛ to ⅝ inch. Made by New Britain Machine Co., Dept. A, New Britain, Conn.

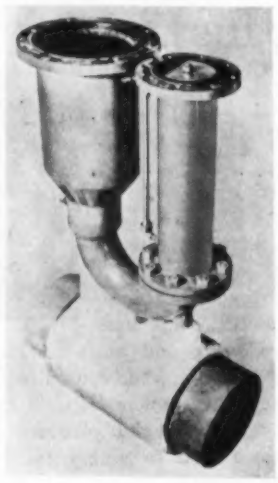
▲ Mention Item NED-5956 when writing ▲

CARBIDE GAGE BLOCKS

Used as series of wear blocks on ends of gage block build-ups, Carblox cemented carbide gage blocks reduce wear error and greatly increase useful life of gage block sets. These blocks are Hoke type and can be used as protective anvils or as individual blocks. They are practically non-magnetic and are highly resistant to rust and corrosion. They are 0.950-inch square with 0.260-inch holes and are available with A accuracy to 0.000004 inch or B accuracy to 0.000008 inch in sets of two 0.050 or 0.100-inch; in sets of four containing each of these two sizes, and in sets of fourteen varied sizes. Made by Lincoln Park Industries, Inc., Lincoln Park 25, Mich.

▲ Mention Item NED-5957 when writing ▲

DIFFUSION PUMP



Made entirely of metal and designed to withstand rigors of industrial use, type B-8-0 high vacuum diffusion pump is being used to dehydrate penicillin, blood plasma and food and to produce magnesium directly from ore by ferro-silicon process. It has four stages of jets to give high pumping speed and 8-inch inlet flange for large gas handling capacity. Against modest fore-pressure requirement of approximately 500 microns of mercury absolute, it will handle 2500 cubic feet of free air per minute in pressure range of 0.1 to 0.01 microns.

Pump is equipped with electrically heated boiler with automatic thermoswitch and has built in cut-off switches in case water supply fails or boiler overheats. Water cooling coils on boiler give short cooling down period and allow for rapid exposure of pump to atmospheric pressure after use. Made by National Research Corp., 100 Brookline Ave., Boston 15, Mass.

▲ Mention Item NED-5958 when writing ▲

MOTORIZE with LIMA DRIVES

For unit motorization of Machine Tools, you can select no better drive equipment than that made by LIMA.

These units are built in sizes from 1 to 25 hp, to meet the uses every requirment of selective speed drive equipment.

Our satisfied customers are proof that LIMA Gearshift Drives do their jobs *Faster* and with *Greater Precision and Safety*

Wire or write today for address of Lima Engineering Service nearest you. Let our Engineers show you how LIMA can serve in *your* plant.

Large enough to successfully serve you, yet small enough to give personal attention to your needs.

THE LIMA ELECTRIC MOTOR CO.
392 Findlay Road
LIMA, OHIO
REPRESENTATION IN MOST PRINCIPAL CITIES
LIMA GEARSHIFT DRIVES - LIMA ELECTRIC MOTORS
LIMA MAGNETIC POLISHING LATHES - LIMA PEDESTAL GRINDERS

▲ Mention Item NED-5959 when writing ▲

MACWHYTE WIRE ROPE SLINGS

... are solving hundreds of handling problems!

● Whether you're lifting light loads or heavy loads, there is a size and type of Macwhyte Wire Rope Sling that will do the job quickly, easily, and safely. Macwhyte makes many different types, sizes, and constructions of wire rope slings. All are manufactured under U. S. and Foreign Patents. Thousands of Macwhyte Slings are now speeding production of vital war material, but we make this pledge to you: "We will continually produce to the utmost of our ability without sacrifice of quality."

Whatever your sling problem, get in touch with Macwhyte. You'll receive practical cooperation and suggestions based on our experience with hundreds of others doing jobs similar to yours.

Sling literature is available without obligation. A request on your company letterhead will bring it to you promptly.

ARMY E NAVY

MACWHYTE COMPANY
2932 Fourteenth Avenue, Kenosha, Wisconsin
752-S

▲ Mention Item NED-5960 when writing ▲

IF YOUR POSTWAR PRODUCT WILL *Roll*

... it will perform better, more profitably, with

GENERAL JUMBO JR. TIRES

O. K. CHAMPION POTATO DIGGER—Problem: ordinary tires pulled off rim when digger swiveled at ends of rows in turning around. 16" and 18" General Jumbo Jr. tires—tubes—wheels eliminated all trouble. Quoting Mr. Charles Johnson, Purch. Agent, Champion Corporation, "Jumbo Jrs. lowered digger 3" closer to the ground; permit easy transportation from farm to farm; save as much as 5 gallons of fuel per day; eliminate clinging mud; prevent crushing or bruising of potatoes; do not bog down in wet weather harvesting; ride easily over stony ground; allow use of lighter models of tractors."

GENERAL JUMBO JRS. MAY MAKE YOUR POSTWAR PRODUCT POSSIBLE...

On drawing boards now are hundreds of new products that either have been *created*, thanks to General Jumbo Jrs., or that will perform better, more profitably because of this proved tire-tube-wheel combination. Originator of the wide rim design, Jumbo Jrs. give service unequalled by any other industrial pneumatic. If your product will roll . . . if you are looking for postwar planning help . . . don't overlook General Jumbo Jrs. Our wide experience in solving tough problems . . . our engineering advice in the application to new uses . . . is at your call.

★

Tires 8" to 24" O. D. Load capacity 100 lbs. to 1500 lbs. per tire... 2-4-6 and 8-ply with separate tubes and heavy duty wheels.

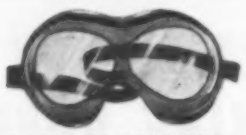
Dept. 2

THE GENERAL TIRE & RUBBER COMPANY
AKRON, OHIO

GENERAL JUMBO JR. INDUSTRIAL PNEUMATIC TIRES

▲ Meniton Item NED-5961 when writing ▲

No. 527 CHIPPERS' GOGGLE—preferred for their light weight, form-fitting comfort, simple adjustment. Also available in welders' model.



No. 552 COVER-LITE GOGGLE—new lightweight champ! Weighs only 96/100 of an ounce. Plastic construction; with clear, replaceable plastic safety lenses.

No. 94 HEALTH GUARD RESPIRATOR—efficiency plus comfort; easy to breathe and talk through; protects against lead, silica, nuisance dusts. Bureau of Mines approval.

No. 360 SPECTACLE GOGGLE—side shield model featuring the exclusive CESCO Comfort Bridge. Available with hardened, super-safety and anti-glare lenses.

To Guard All Workers
...Send for CESCO Catalog

This book shows you CESCO's complete line of head and eye protective devices. It's worth while having . . . write today.

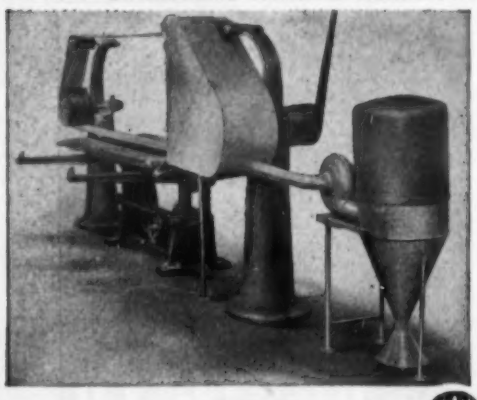
CESCO

CHICAGO EYE SHIELD CO.
2328 Warren Boulevard • Chicago 12, Illinois

CESCO FOR SAFETY

▲ Mention Item NED-5962 when writing ▲

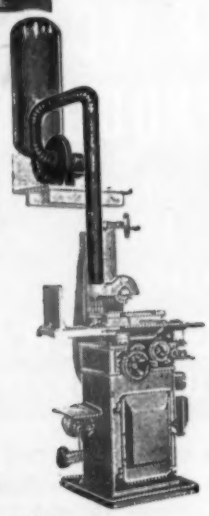
BETT SANDER with a dust collector will



abolish an ever present risk of contracting Silicosis . . . dread disease of the lungs

★

The very finest dust particles—too fine to be seen by the naked eye—are the really dangerous ones—dangerous to your health and dangerous to the parts of a finely adjusted machine.



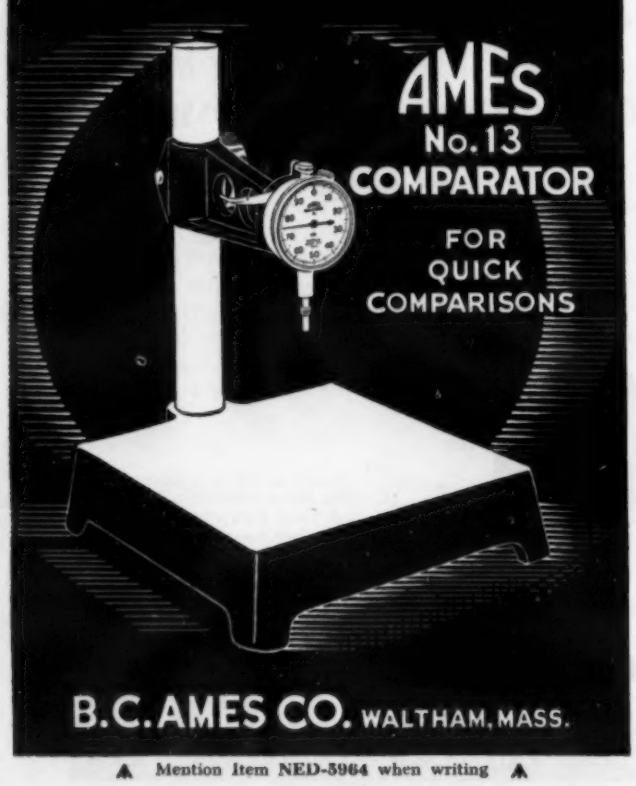
LEIMAN BROS. NEW UNIT
DUST COLLECTOR

USED ON
SURFACE GRINDERS
LATHES
SAW MACHINES
BELT SANDERS
WHEEL SANDERS
DOUBLE END GRINDERS
SAND BLASTS
AND OTHER DUST CREATING DEVICES

LEIMAN BROS.
167 CHRISTIE ST. NEWARK 5, N. J.

▲ Mention Item NED-5963 when writing ▲

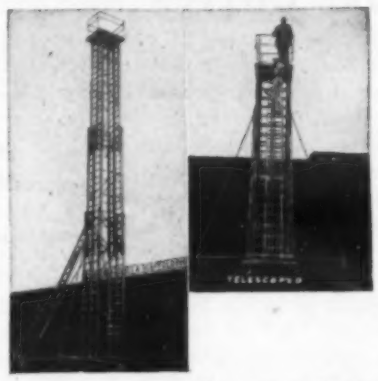
FAST • ACCURATE



B.C. AMES CO. WALTHAM, MASS.

▲ Mention Item NED-5964 when writing ▲

ELEVATING WORK TOWER



Capable of carrying up to 1000-pound loads safely, this double panel tower is adaptable to wide range of industrial, maintenance and construction applications. Designed to meet specific need, towers are available for minimum working heights of 8 feet and extend in excess of 80 feet. Two folding outriggers permit passage through narrow aisles, conserve floor space during storage and assure stability of tower when in use. Removable guard rail permits movement where head room is limited. Tower is equipped with smooth-rolling locking wheels which add to portability. When telescoped, illustrated 60-foot tower requires only 4½ x 15-foot storage space. Made by **Universal Fittings & Scaffolding Co.**, Zelienople, Pa.

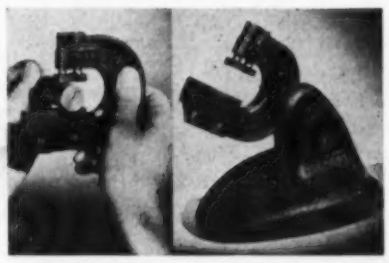
▲ Mention Item NED-5965 when writing ▲

CIRCUIT BREAKER

Of improved design, this single pole circuit breaker has been developed for operation on 240 volts alternating current or 125 volts direct current, with maximum of 50 amperes. This unit may be either front connected or rear connected. It features instantaneous trip or is available in selection of three time delay types. Device measures 5¼ inches long, 2-11/16 inches high and 1½ inches wide. Setting of breaker is clearly indicated on toggle type reset lever. Made by **Heinemann Circuit Breaker Co.**, 106 Plum St., Trenton, N. J.

▲ Mention Item NED-5966 when writing ▲

ADJUSTABLE SNAP GAGES



Fast, accurate inspection is possible with this line of extended anvil adjustable snap gages. Work is located easily and is quickly aligned with gaging anvils. Smooth, even approach of gage to work eliminates uneven wear and adds to life. Extended anvil provides stable bearing when presenting gage to work in machine. As hand gage, extended anvil facilitates inspection. Used in stand, anvil provides platform upon which work is located in presenting it to gaging position.

Locking devices are used on adjustable anvils which are of square type in standard units. Pin type anvils may be furnished. Twenty-five models cover range from 0.000 to 6.625 inches and offer choice of two different height lower anvils. Larger sizes are available on special order. Made by **The Sheffield Corp.**, 1530 E. Third St., Dayton 1, O.

▲ Mention Item NED-5967 when writing ▲

Don't be Satisfied with your production! Change to TECO Cemented Carbide and get

- More pieces between grinds
- More grinds per tool
- Lower tool cost
- Less down time

Plant experience shows that TECO Cemented Carbide consistently outproduces other carbides in job-for-job comparisons. Make this test: Put TECO Cemented Carbide Tools on any machine in place of present carbide tools. Run under identical conditions and let results prove the superiority of TECO Cemented Carbide.

Rigidly controlled manufacture gives TECO Cemented Carbide greater hardness, density and uniformity — more resistance to wear and breakage. Have a tool engineer discuss your needs. Write for catalog and price list.

IMMEDIATE DELIVERY FROM STOCK can be made on most standard TECO Cemented Carbide tools and blanks.

TUNGSTEN ELECTRIC CORPORATION • 569 39th Street, Union City, N. J.
Branch Office: 2906 Euclid Avenue, Cleveland, Ohio
Representatives: Indianapolis, Ind. Chicago, Ill. Detroit, Mich.

TECO Pioneers in Tungsten Carbides for over a Quarter Century **CEMENTED CARBIDE**

▲ Mention Item NED-5968 when writing ▲

SMOOTH FINISH—Smoo

Battle damaged steel and dural propellers a refinished faster, better with rubber cushione Brightboy, employed in the vital operation reducing burrs and pit marks before recoati and repainting.

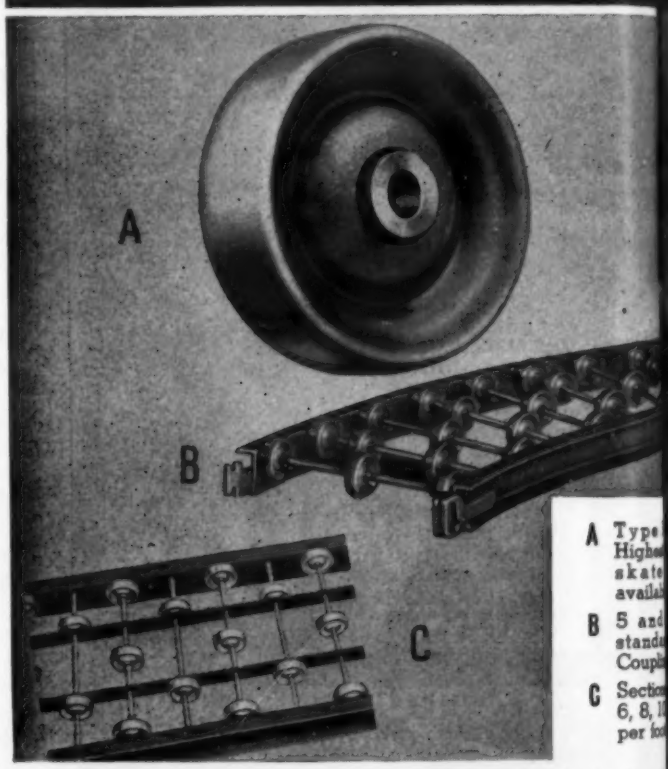
Ask your dealer for literature and prices. Bright boy field men are at your service.

WELDON BERT

Bright

▲ Mention Item N when writ

TYPE 115 WHE



A Type heel— Higher roller skate wheel availa
B 5 and ctions stand versal Coupl ed.
C Sectio le with 6, 8, 1 wheels per fo

▲ Mention Item N when w

3 REASONS WY
MATERIALS HANDLING
IS FASTER AND SAFER T Y

HERE are three standard Union Metal mat handling units that are in wide use in indust day. Designed to speed the flow of materials wi plant or between plants, they simplify storage, cu duction costs, increase worker safety. Light in w yet amazingly strong and durable, they can be sup in a wide variety of sizes and styles. We also creat cial designs for special requirements. The Union Manufacturing Company, Canton 5, Ohio.

UNION METAL
Materials Handling Equipment

▲ Mention Item N when w

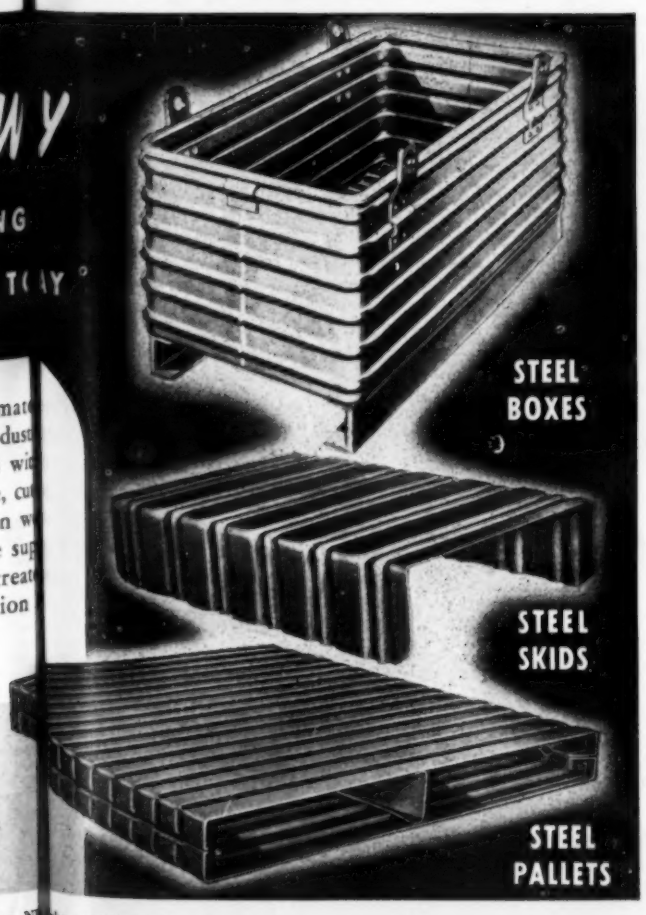
BRIGHTBOY INDUSTRIAL DIVISION
Weldon Roberts Rubber Co.
Newark 7, N. J.

ROBERTS
Brightboy
REG. U.S. PAT. OFF.

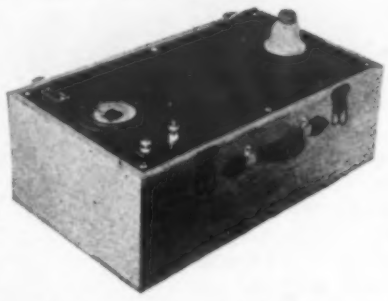
CONVEYERS

For warehouse application and for the loading and unloading of trucks and cars, or for general light conveying work, these sections are ideal. They are rugged and light and can stand a reasonable amount of abuse. 90° Curves and attractive tripod type supports are standard equipment. Ask for a new bulletin and data sheets covering this Wheel Conveyer.

Mathews Conveyer Company
ELLWOOD CITY
PENNSYLVANIA



HIGH VOLTAGE METER



Completely self-contained and portable, type 772 two-scale Kilovoltmeter has ranges of 0-2 and 0-20 kilovolts. Compact hardwood case is fitted with carrying handle for convenience in use. This instrument is designed for use in testing direct current circuits only. Made by **Shallcross Mfg. Co.**, 10-F Jackson Ave., Collingdale, Pa.

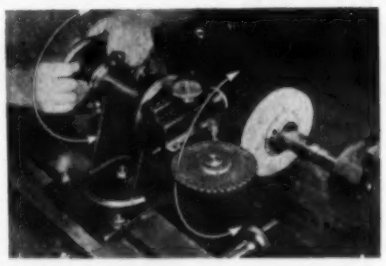
▲ Mention Item NED-5972 when writing ▲

DIESEL AIR FILTER

Having capacity of 2200 to 3200 cubic feet of air per minute, Far-Air diesel engine air filter is composed of four separate filter panels. These filters are of herringbone channeled fine wire screen and are mounted with spring clips on steel frame. Construction permits easy removal for cleaning or changing while engine is in operation. Maximum air velocity is 635 feet per minute with static pressure of 0.15 to 0.29 inches of mercury. Other sizes and capacities can be furnished. Made by **Farr Co.**, 2615 Southwest Dr., Los Angeles 43, Calif.

▲ Mention Item NED-5973 when writing ▲

CUTTER GRINDING FIXTURES



Designed to facilitate sharpening of radius cutters, this Model B fixture is easily set up and operated. All adjustments are quickly made for radius, feed, alignment, back-off angle and arc. Most angular or flat edges or surfaces as well as arcs up to 180 degrees can be accommodated.

Device carries horizontal spindle or column. Operating handwheel is fitted with disc and adjustable stops to limit arc of swing. Head has two micrometer type adjustable cross slides which are at right angles to each other. These slides permit positioning of cutter so that center of tooth radius coincides with centerline of fixture spindle. Adjustable spring stop provides for indexing of cutter. Accessories include diamond wheel dresser and gage for squaring up first tooth face. Made by **Hill Machine Co.**, 1032 Mulberry St., Rockford, Ill.

▲ Mention Item NED-5974 when writing ▲

HIGH QUALITY, HIGH PRECISION BRUNING SLIDE RULE

This new Bruning No. 2401 Slide Rule gives you hairline accuracy plus maximum visibility in a pocket-type rule. Do not confuse 5-inch "duration substitutes." All plastic construction eliminates sticking or binding. Precision graduations are molded in—will not lose visibility in use. A, B, CI, C, D, K, S, L and T scales—CI graduation and numerals are red — Beveled edges bear graduated scales in both inches and centimeters. Rule furnished in natural leather case with instruction booklet. Charles Bruning Co., Inc., 4700 Montrose Avenue, Chicago 41, Illinois.

BRUNING SINCE 1897
NEW YORK • CHICAGO • LOS ANGELES
Branches Throughout the United States • Everything for the Engineer and Draftsman
2360-363

▲ Mention Item NED-5975 when writing ▲

"Pay Air" that Pays
TORNADO ELECTRIC BLOWERS

TORNADO "pays" by supplying clean, dry air, for cleaning motors and machinery, at less than 3c an hour. It pays by prolonging service, preventing shutdowns and reducing replacements.

TORNADO "pays" by providing a 1 h. p. motor for a quicker, more thorough clean-up, blowing air at 295 m. p. h. It pays by reducing power costs, because a clean motor runs with less power.

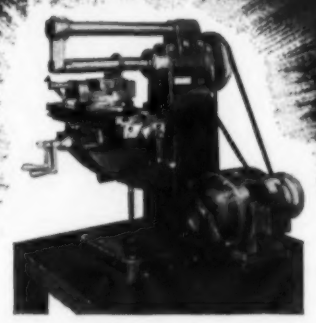
TORNADO "pays" by reducing fire hazard. It "pays" by being easily portable, by plugging in at any outlet, by making it easy to air-condition motors, generators, etc. by keeping them clean. *Investigate!*

Send for Details and FREE TRIAL OFFER

BREUER ELECTRIC MFG. CO.
5106 N. RAVENSWOOD AVE., CHICAGO 40, ILL.

▲ Mention Item NED-5976 when writing ▲

ONE BENCH MACHINE FOR BOTH HORIZONTAL and VERTICAL Milling



benchmaster mill with horizontal spindle and overarm

FOR PRECISION TOOL WORK OR HIGH-SPEED PRODUCTION

benchmaster — offers a bench milling machine easily convertible from a conventional horizontal to a vertical miller by simply interchanging the spindle attachments.

ACCURATE • VERSATILE • LOW PRICED

SPECIFICATIONS: Table size—6" x 14"—Three Tee slots ⅜", 2" center • Longitudinal travel 8½" • Traverse travel 5½" • Vertical travel 8½" on vertical mill—9½" horizontal mill • Height 28" • Weight (less motor) 215 lbs. • Requires ½ h.p. motor • Spindle speeds (standard 1725 rpm motor) 450-850-1400-2100 rpm.

benchmaster tools manufacturing company
2952 w. pico, los angeles 6, cal.

▲ Mention Item NED-5977 when writing ▲

Stanley No. 594 Celluloid Tipped Hammer

TOOLS for Product Servicing

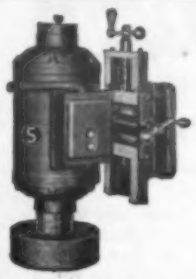
No matter how well a machine is built, it sometimes needs servicing—an important and often urgent matter in these war-busy days. Many manufacturers maintain a special department for repairing and rebuilding their own make of machines which have been returned to them by the users. This calls not only for skilled men—but also for competent, dependable tools—Stanley Tools designed for product servicing work.

When such needs occur—think of Stanley. The Stanley line is broad and the quality is excellent. Send for Stanley Catalog No. 50 descriptive of the line of industrial hand tools.

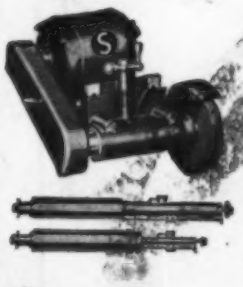
STANLEY TOOLS
104 Elm St., New Britain, Conn.

THE TOOL BOX STANLEY OF THE WORLD

▲ Mention Item NED-5978 when writing ▲



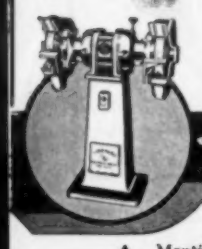
Grinder with Vertical and Horizontal feeds. Available with or without feeds as preferred. Integral mounting pad for rigidity.



YES SIR! You can now make your machine a "double purpose" machine, the "Standard Way". STANDARD VERTICAL SPINDLE GRINDERS and STANDARD INTERNAL-EXTERNAL GRINDERS can be easily mounted on your Planers, Boring Mills, Shapers, Milling Machines, etc., giving you added profits!

Vertical Spindle Grinders range from: ½ H.P. to 15 H.P. for straight or cup wheels up to 16" diameter. Also for cylinder wheels, or segmental wheel chucks. Speeds: 1200, 1800, and 3600 R.P.M. Internal-External Grinders have interchangeable quill for internal grinding up to 24" deep.

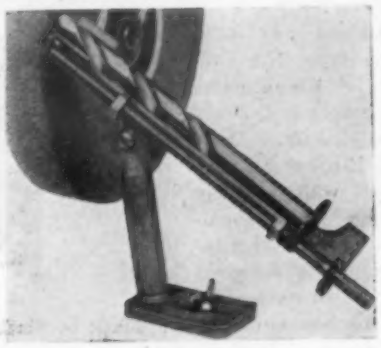
Write for *Your* copy of Catalog 43, today.



The STANDARD ELECTRICAL TOOL Co.
CINCINNATI · 4 · OHIO
2488 River Road

▲ Mention Item NED-5979 when writing ▲

DRILL SHARPENER



Twist drills can be sharpened accurately, even by unskilled operators, through use of this Super drill sharpening jig. Device is mounted on any grinder next to wheel, as shown. Drills ranging from 3/32 to 1-1/16 inches in diameter and up to 11 inches long can be handled. Tool is adjustable to 59, 69 or 88-degree angles. List price is $2.95. Made by **A. D. McBurney**, 939 W. Sixth St., Los Angeles 14, Calif.

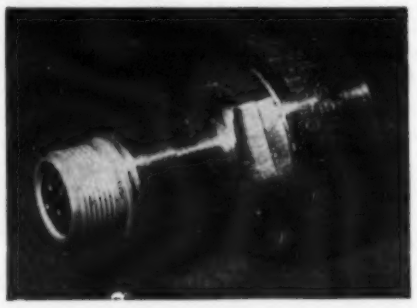
▲ Mention Item NED-5982 when writing ▲

HYDRAULIC CONTROL VALVE

Adaptable for hydraulic operation of elements of road-building, automotive, industrial and marine equipment, as well as for original purpose of aircraft positioning control, No. 13261 four-way control valve provides remote control. Minimum of installation and maintenance is required. Valve permits regulation of high pressure hydraulic systems using ISOdraulic remote control system. Unit illustrated has 16-gallon per minute flow with pressure of 3000 pounds per square inch and is designed for ¾-inch lines. Units for other flows and pressures are available. Made by **Adel Precision Products Corp.**, 10777 Van Owen, Burbank, Calif.

▲ Mention Item NED-5983 when writing ▲

DYNAMIC PRESSURE GAGE



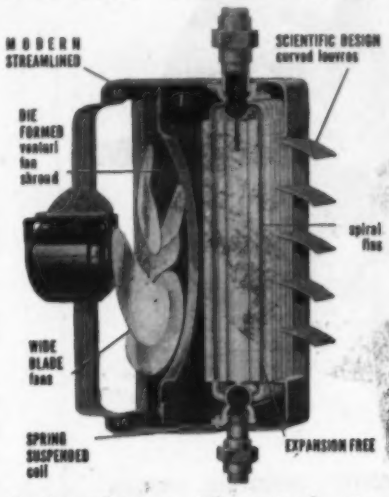
Of differential type, dynamic pressure gages are made in ranges of 0 to 1000 pounds and in intermediate ranges as low as 0 to 1 pound. In low pressure ranges, they have frequency response of 10 to 200 cycles per second and in higher ranges, dynamic characteristics are from 0 to 500 cycles per second.

Standard pressure connections are ⅛ inch and each gage is furnished with static pressure calibration curve indicating diaphragm characteristics. Bodies of units for high pressure work are of stainless steel. Pickups which are specifically designed for air foil studies are of aluminum and are furnished with leads rather than electrical connector, as shown above. Associated power supply and amplifier equipment are available also. Made by **Trimount Instrument Co.**, 37 W. Van Buren St., Chicago 5, Ill.

▲ Mention Item NED-5984 when writing ▲

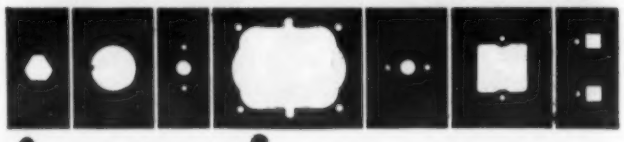
Unit Heater . . . sets new standard of quietness and heating efficiency

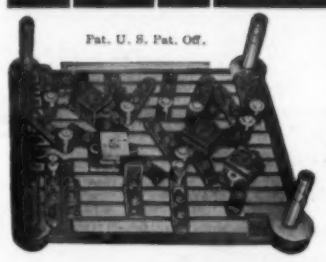
McCord Unit Heaters are a time proven product, embodying design based on years of experience in the heat transfer field. These units are not only rugged in design and guaranteed for use on #150 p.s.i. steam pressure, but are made attractive in appearance. Two outstanding features appeal to maintenance engineers — we use standard motors with standard bases which quickly permits the use of replacement motors should a motor fail in service—the heating element is made of individual spiral fin tubes which are free to expand independently without putting a strain on the brazed joints. The entire heating unit is spring suspended and floats free in the casing, eliminating rigid connections. Improved type fan blades deliver large volumes of air with minimum air noise and vibration which makes these units suitable for office and store use. A complete line of vertical projection type unit heaters and blast coils are also available. Catalog on request, or write for new folder "Instructions for Maintenance of Unit Heaters". **McCord Radiator & Mfg. Co.**, Detroit, Mich.



▲ Mention Item NED-5986 when writing ▲

▲ Mention Item NED-5980 when writing ▲





WHISTLER ADJUSTABLE DIES

Precision Perforating and Notching
READY FOR PRODUCTION

Multiply the production of your presses. More holes in given area—reduces "down" time—years of use in different pattern arrangements—complete interchangeability of parts—no special tools—in all standard sizes from ½". Whistler dies, tools and production machinery are used the world over.

Every Production Executive should have this Catalog. Write:

S. B. WHISTLER & SONS, Inc.
752-756 MILITARY ROAD BUFFALO, N. Y.

▲ Mention Item NED-5987 when writing ▲

BUSCHMAN PORTABLE CONVEYOR

loads and unloads boxes, crates, cartons, and other packages, by gravity, to and from production lines, storerooms, trucks, box-cars, loading platforms, ships.

In 10-foot straight and curved sections. Quickly, easily changed from one location or application to another. No tools required for coupling sections or adjusting height. In stock for immediate delivery. Write for Bulletin No. 8, showing applications.

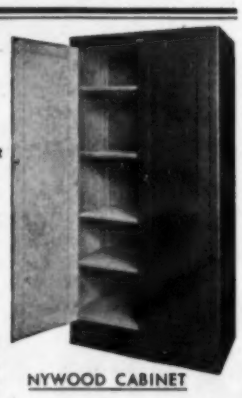
The E. W. Buschman Co., Inc.
418 New St., Cincinnati 2, Ohio

▲ Mention Item NED-5981 when writing ▲

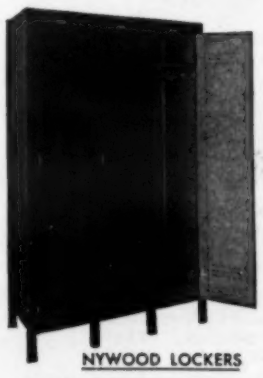
Instead of Steel—use
NYWOOD LOCKERS & CABINETS

Here are some special values in famous Nywood Storage and Wardrobe Cabinets.

No. 682C Storage Cabinet 36x18x72 $35.04
No. 682W—Same Size in Wardrobe $29.71
No. 642C Storage 36x24x72 $39.36
No. 642W—Same Size in Wardrobe $32.03



NYWOOD CABINET



NYWOOD LOCKERS

NYWOOD products are built of sturdy plywood, made termite-proof, resistant to fire and protected against salt water, weather and odors through immersion in special solution. Tough, lacquer exteriors, office green. Interiors, tops and bottoms neutral tone finish resulting from processing solution. Complete line of sizes and sectionizing. Easy assembly. Attractive prices.

STEEL STOOLS AND OTHER OFFICE AND SHOP EQUIPMENT

Excellent line of all steel shop boxes, drawer units, work benches, rotabins, etc., etc.—ready for immediate shipment. Adjustable steel stool illustrated in various heights—with or without backrest.

Tell us what you need, we'll send details and prices

NYCE Metal Products Company
4308 N. Broad St., Phila., Pa. • Phone MIChigan 6463

▲ Mention Item NED-5985 when writing ▲

WALDRON SILENT STEEL GEARS

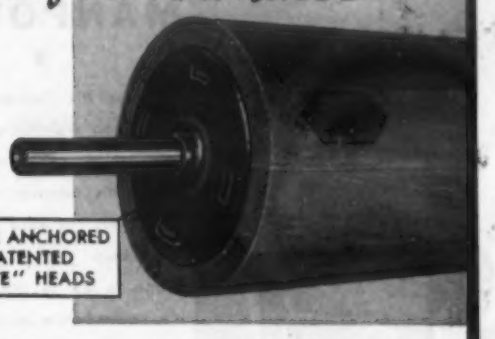
Steel laminations separated by a graphite film reduce noise vibrations. This construction maintains true profile of teeth and prevents breakage. Result—strength, quiet operation and greatly increased life. Send for Catalog 71.

JOHN WALDRON CORP.
NEW BRUNSWICK, N. J.

▲ Mention Item NED-5988 when writing ▲

THE BEST WOOD ROLL FOR DRY SERVICE EVER MADE....

"Shaf-tite" Roll No. 252



SHAFTS ARE ANCHORED WITH PATENTED "SHAF-TITE" HEADS

That's what customers say who have been using these "Shaf-tite" No. 252 LAMINATED Wood Rolls for years. Made of kiln-dried pieces, glued under heavy pressure. Shafts are "anchored" with patented "Shaf-tite" heads. Standard sizes — 4 to 10 inch diameter. Write for quotation.

RODNEY HUNT

"Shaf-tite" ROLLS

RODNEY HUNT MACHINE CO., 73 Maple St., Orange, Mass., U.S.A.

▲ Mention Item NED-5989 when writing ▲

NO OTHER TOOL LIKE H&H RECIPROCATING ACTION

PORTABLE Electric TOOL

★COMPLETE WITH MOTOR★

Motion is "in and out"—not spinning or rotary. Tool is portable—carry it anywhere—five pounds—easy to handle. Self contained. Ready to plug into any 110 volt electric outlet. Use it to work on any metal, wood, plastic or other materials that may be filed, sawed or polished. Delivers 1000 short, accurate strokes per minute, much faster than hand methods, no chattering. Complete line of files, scrapers, hones and other accessories available. Change accessories in 20 seconds. Used in largest plants and small shops.

Send for catalog

H&H RESEARCH CO.

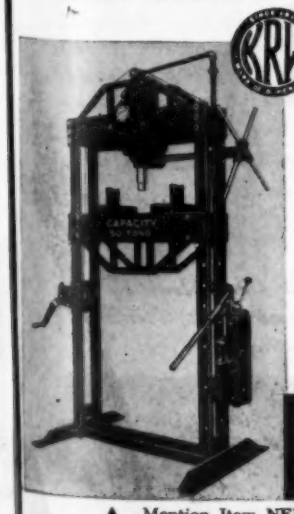
429 MARQUETTE BLDG • DETROIT 26, MICH.

▲ Mention Item NED-5990 when writing ▲

IMMEDIATE DELIVERY

2 to 3 days

ON KRW HYDRAULIC ARBOR PRESSES



IF YOUR ORDER CARRIES A PRIORITY OF AA-4 OR BETTER

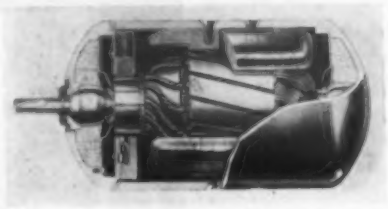
● With the necessary Priority rating, we can make immediate delivery (2 to 3 days) on all standard model KRW Hydraulic Presses, and quick delivery (2 to 3 weeks) on special built-to-order hydraulic presses. KRW's modern plant and expanded facilities make this possible. If you want action, order a KRW—the hydraulic arbor press that is engineered for war production. Standard models are made in 25, 50, 60 and 75-ton capacities. Write for our new bulletin describing both standard and special presses.

K. R. WILSON

10 LOCK ST., BUFFALO 2, N. Y.

▲ Mention Item NED-5991 when writing ▲

SMALL ELECTRIC MOTORS



Designed especially for heavier tasks in automotive heating, ventilating and air conditioning, this line of type J direct current Micromotors is available in sizes from 1/10 to 1/20 horsepower. Motor will displace up to 600 cubic feet per minute with blowers and up to 2400 cubic feet per minute with fan applications. Modulated magnetic field eliminates mechanical and magnetic noises, as well as vibration. Armatures are cushion mounted for quiet operation. Large capacity reservoirs supply lubricant over long period through porous bronze bearings. Made by **A. G. Redmond Co.**, Owosso, Mich.

▲ Mention Item NED-5992 when writing ▲

SMALL THERMOMETERS

Adaptable for installation where temperature indication must be maintained with laboratory accuracy but where large thermometers are not suitable, Midget industrial thermometers are designed for use in distilleries, synthetic rubber plants, petroleum industries and other processing applications. Lens-front, yellow back tube and scale engraved on glass provide easy reading. Scale ranges may be had between −30 to 700 degrees Fahr.

Thermometers are equipped with sturdy metal cases to protect them against breakage or rough handling. Bases are threaded to fit into standard wells on process equipment on which they are applied. Both straight and angle types can be supplied. Made by **H-B Instrument Co.**, 2506 No. Broad St., Philadelphia 32, Pa.

▲ Mention Item NED-5993 when writing ▲

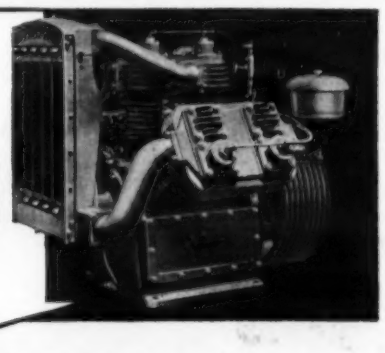
SELF-DUMPING HOPPER

Handling of small parts, loose materials and scrap is speeded up with this self-dumping hopper. Device is all-metal skid bin with hinged bottom. It can be easily picked up and moved by hand lift truck but dumping operation can be accomplished only when hopper is employed in conjunction with electric fork truck.

Dumping is done by elevating hopper by means of truck forks until bin handle engages with catch at top of truck elevating column. Forks are then lowered, leaving hopper suspended. Unsupported hinged bottom opens, allowing contents to pour forth. Empty hopper is released by raising forks. Feed hopper is then lowered on forks and carried away for refilling. Made by **The Yale & Towne Mfg. Co.**, 4537 Tacony St., Philadelphia 24, Pa.

▲ Mention Item NED-5994 when writing ▲

in QUICK !



No Special Foundation
No Cooling Water Piping
No Space Problem

A *quick* answer to your increased air demand! Worthington Radial Air Compressors are easy to install. Compact—no space problem, no special foundation. Air-cooled—no water piping needed. Feather Valves*—no imitations equal them.

Models: direct connected, bare, V-belt driven, unabloc. Bulletin H-620-B16F. Worthington Pump and Machinery Corporation, Standard Products Division, Harrison, N. J.

AC 4-11

THERE'S A WORTHINGTON MAN NEAR EVERY INSTALLATION

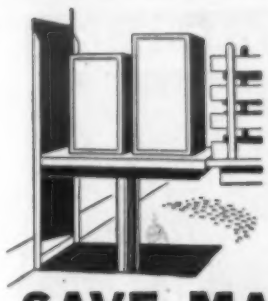
WORTH BEHIND THE NAME WORTHINGTON

*Reg. U. S. Pat. Off.

36 DISTRICT OFFICES THROUGHOUT THE U. S.

▲ Mention Item NED-5995 when writing ▲

CLEAR UP LOADING PROBLEMS

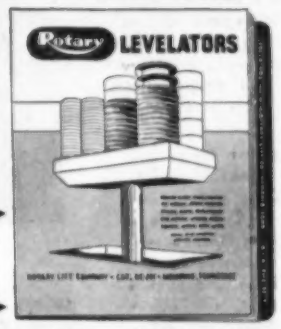


Say "good bye" to space taking, time consuming loading docks and ramps. With ROTARY LEVELATORS both can be eliminated. Elevate heavy loads to truck or freight car height smoothly, speedily. Here is the most modern method of vertical transportation, efficient and troublefree.

SAVE MAN POWER

A single operator, by the push of a button, keeps loading schedules on time. Write the ROTARY LIFT COMPANY, 1034 Kansas Street, Memphis, Tenn., and tell us about your handling problems—we can help you.

Send For Your FREE BOOK



Contains engineering data, architectural notes and photographs.

Rotary MEMPHIS LEVELATORS

REPRESENTATIVES IN PRINCIPAL CITIES, MEXICO AND CANADA

▲ Mention Item NED-5996 when writing ▲

HOW we help WICO MAKE SAVINGS in weight, assembly time and costs and how we can do it for you, too.

The piece of paper that improved automotive type magnetos.

Engineers at Wico Electric Company, West Springfield, Mass., conceived this ingenious part to replace a gasket and a metal dustcover on one of their automotive type magnetos. Insulating properties of the material* eliminate arcing, it is lighter than the metal replaced, and it is readily formed and punched in two fabricating steps, resulting in an accurate, tough, one-piece component for quick assembly.

Rogers familiarity with fibrous materials, dating back to 1832, makes Rogers a natural fabricator as well as manufacturer of such materials. WICO recognized this and had Rogers do the job.

We have many standard dies and are equipped to make rectangles, squares, rings, discs, etc. from any fibrous material you specify, in huge quantities — quickly.

But we are especially interested in fabricating your intricate, close-tolerance parts. We are equipped to handle them — with an extensive tool and die shop, complete testing laboratory facilities, and a capable engineering staff.

Ask for samples of Rogers fabrications, or send blueprints and specifications for pricing, or have a Rogers engineer call on you. Contact the Fabricating Division, Rogers Paper Manufacturing Co., 105 Mill Street, Manchester, Conn. Telephone: Manchester 5163

*Material in this case was Rogers .020" KAYGREY, one of many Rogers wet-process, laminated cellulose sheet products. Made of new cotton fibers and chemically purified wood pulp (50% of each), its properties include:

	Typical Test Values
Specific Gravity	1.35
Tensile, parallel grain—p.s.i.	14,550
Tensile, cross grain — p.s.i.	5,450
Elongation, parallel grain—%	7.8
Elongation, cross grain—%	11
Mullen, lbs.	535
Dielectric — VPM	532
Tear, parallel grain—gms.	1,239
Tear, cross grain—gms.	1,940
pH	7.0

If you should be planning a new material, Rogers can, with a total of 25 lbs. of all materials involved, produce within 48 hours a sample that will duplicate regular production runs, and can test all properties. This is possible with glass fibers, leather, asphalt, asbestos, lignin, rubber, phenolics, ureas, cork, vinsol or any other materials that will go through a water process and a paper machine.

ROGERS PAPER MANUFACTURING COMPANY MANCHESTER, CONNECTICUT

▲ Mention Item NED-5997 when writing ▲

Prompt Shipment from Stock!

Today wheels must keep turning . . . shut-downs for repairs and change-overs must be brief, and a good wheel puller is essential to save valuable man and machine hours and prevent breakage of irreplaceable wheels, pulleys and gears.

ARMSTRONG-BRAY GEAR AND WHEEL PULLERS come in types and sizes for all industrial applications.

STEELGRIP Standard Rigid Arm Pullers are of improved design. Will not slip from work. Arms are forged and heat-treated. 2-arm, 3-arm and special designs. 11 types.

CHAINGRIP Universal Pullers pull spoked wheels, solid gears, pinions, etc., even though they are a considerable distance from end of shaft. Proof tested chains have chain hook on one end, and special pulley hook on other. Furnished in 2 sizes.

Write for Catalog today. Be ready for emergencies—to keep wheels turning

ARMSTRONG-BRAY & CO.
"The Belt Lacing People"
5362 Northwest Highway, Chicago 30, U. S. A.

▲ Mention Item NED-5998 when writing ▲

"DUST CONTROL KNOW HOW"

• The "Dust Control Know How" of Pangborn Corporation is compiled and correlated in new Bulletin No. 909. It is a complete digest of thirty-five years' experience and progress in the Control of Industrial Dust.

• No dust problem is too large or too small for efficient and economical solution — yours is included and covered in this interesting treatise. Write today for your copy of Bulletin No. 909.

ARMY E NAVY

PANGBORN

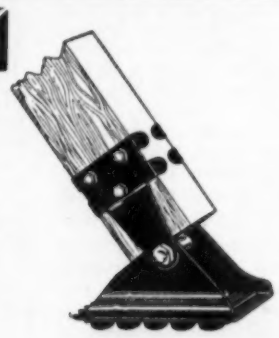
WORLD'S LARGEST MANUFACTURERS OF DUST CONTROL AND BLAST CLEANING EQUIPMENT
PANGBORN CORPORATION • • HAGERSTOWN, MD.

▲ Mention Item NED-5999 when writing ▲

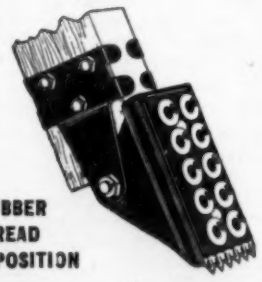
DAYTON

SAFETY LADDER SHOES FIT ANY STANDARD LADDER RAILS

Shoe or base is made of No. 16 gauge and the side plates are of No. 13 gauge steel. Suction grip treads are renewable. Lock nuts and spring washers insure proper adjustment. Easy to install. Write for Bulletin No. 4 today.



SPIKE TOE IN POSITION



RUBBER TREAD IN POSITION

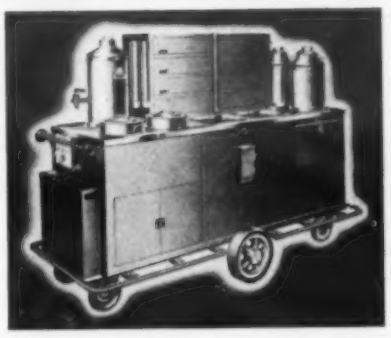
Our Safety Department has a complete line of safety equipment for your every requirement.

Listed By Underwriters Laboratories, Inc.

DAYTON SAFETY LADDER CO.
2337 Gilbert Ave. Cincinnati 6, Ohio

▲ Mention Item NED-6000 when writing ▲

ELECTRIC LUNCH WAGON



Capable of serving approximately two hundred persons, model No. 1889 mobile canteen is electrically heated. Unit can be used to serve any refreshments, ranging from sandwich to complete hot lunch.

Features of wagon are warmer for individual casseroles or other hot dishes; shelves for sandwiches, pies, fruit, and cigarettes; ice cream drawer cooled by dry ice; two 4-gallon soup insets and two 3-gallon containers for reserve; insulated electrically heated 5-gallon coffee dispenser. Canteen is also provided with compartment for bottled cold drinks, paper cup dispensers and storage space for miscellaneous supplies. Coffee and soup capacities can be varied to meet specific requirements. Unit measures approximately 87 inches long by 38 inches wide by 65 inches high. Made by **S. Blickman, Inc.**, Weehawken, N. J.

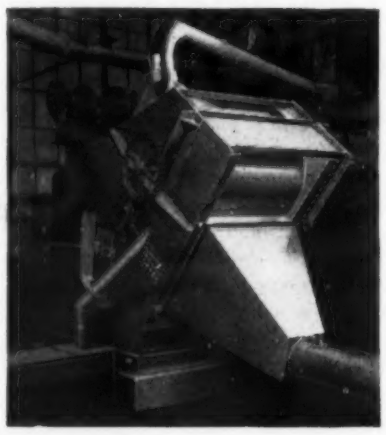
▲ Mention Item NED-6001 when writing ▲

BLIND FASTENER

Serving as nut-plate, rivet or both, Rivnut blind fastener is now being made of brass as well as aluminum. Tensile and shear strength of brass alloy fastener is about 50 per cent greater than that of equivalent size in aluminum. These devices are now being employed for many industrial assemblies in addition to aircraft applications for which they were originally designed. Made by **The B. F. Goodrich Co.**, Dept. E, 500 S. Main St., Akron, O.

▲ Mention Item NED-6002 when writing ▲

BULK MATERIALS DRYER



Low cost drying or cooling of bulk materials which do not require long retention periods is facilitated by Multi-Louvre dryer. This compact, fully enclosed unit contains moving louvres supported on power operated endless chains. Function of these moving louvres is to present material as it flows to secure most efficient drying or cooling action.

Air which is drawn in through moving mass of material and exhausted at top of dryer can be heated to temperature best suited to material. Ample passages between louvres permit air circulation at low velocity. Fine materials can be carried on louvres without clogging. Louvre supporting chains are not in path of heated air nor do they come in contact with material being dried. Made by **Link-Belt Co.**, Dept. NED, 307 N. Michigan Ave., Chicago 1, Ill.

▲ Mention Item NED-6003 when writing ▲

"Here's the kind of hand protection every welder wants"

Ask a welder what he wants in a glove . . . and he'll tell you he wants protection and comfort.

Take this pair of American Optical gloves. They're gun-cut—which means they have seamless palms—and the finger seams are flat to guard against chafing and blistering. They're made of quality chrome tanned cowhide that *stays* pliable.

The seams on AO gloves are located away from the parts that get the most heat and wear. That's why they can take plenty of punishment.

You'll find the Representative of your nearest AO Branch Office can help you choose the proper gloves and mittens from AO's welding line.

American Optical COMPANY
SOUTHBRIDGE, MASSACHUSETTS

▲ Mention Item NED-6004 when writing ▲

THIS G-R WELDER WILL SAVE YOU TIME, MONEY and MANPOWER

Whether it's 'round-the-clock production welding or time-saving maintenance and repair work, this compact G-R Model 35C offers the kind of dependable help you need. Output range is 25 to 300 amperes; it's power-factor corrected and built with class B insulation throughout.

G-R builds 22 models of transformer-type arc welders for manual, combination and automatic welding, in capacities from 125 to 2,500 amperes.

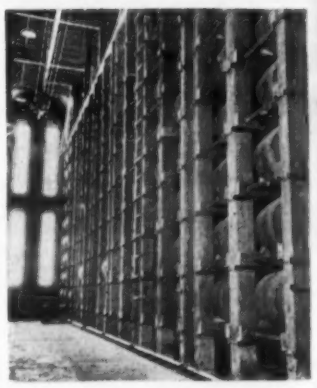
FOR LITERATURES & PRICES, SEE YOUR NEARBY G-R DISTRIBUTOR, OR WRITE DIRECTLY TO

GLENN-ROBERTS COMPANY
1009 FRUITVALE AVENUE, OAKLAND, CALIFORNIA — 2107 ADAMS STREET, INDIANAPOLIS, INDIANA

▲ Mention Item NED-6005 when writing ▲

Flammable Liquid Fires PUT OUT BY WATER!

Rockwood WaterFOG EQUIPMENT
Supplements Sprinkler System Protecting Bonded Whiskey



At Melcher's Distilleries, Ltd., Berthiersville, Quebec, a WaterFOG Deluge System supplements the regular sprinkler system installed on the extremely high ceiling by instantly detecting fire along the floor or in the lower part of the whiskey stocks. Sudden heat rise will automatically cause discharge of WaterFOG (water particles many times smaller than spray) from heads in the aisles and under the racks protecting an area sheltered from the sprinkler system by tier on tier of barrels. Having tremendous heat-absorptive power (much greater than spray) the foglets will rapidly quench the flames . . . cool the liquid, retarding vaporization . . . then, turning into steam, shut off oxygen — cooling, confining, smothering the fire. Entire area is cooled and barrels kept from bursting.

WaterFOG Discharging in Aisle. Similar System Protects Areas Under and Around Barrels

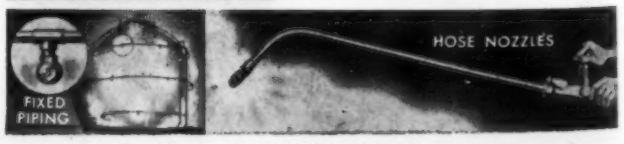
WaterFOG is created by impinging streams from specially-designed Rockwood nozzles — engineered in correct particle size, fog pattern, and velocity for your conditions. Rockwood installations approved by Underwriters' Laboratories and Associated Factory Mutuals; used by Navy, Coast Guard, Maritime Commission, Army, hundreds of industrial plants and refineries. Write for Bulletin 123.

ROCKWOOD SPRINKLER CO., 44 Harlow St., Worcester 5, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

ARMY E NAVY

ROCKWOOD WaterFOG

Water Engineered by Rockwood Cools, Confines, Smothers Oil Fires



▲ Mention Item NED-6006 when writing ▲

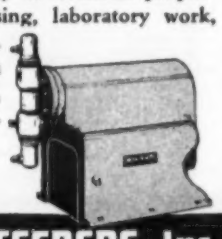
WILSON *Pulsafeeders*

(PROPORTIONING PUMPS)

Guaranteed better than 1/8 of 1% accurate

Eminently superior, almost infallible flow-controls to handle liquids of any nature in any pre-determined quantity from one cubic centimeter to four hundred or more gallons per hour. Accuracy, in most instances, is guaranteed at better than 1/8 of 1% for single or multiple liquids. Flexible and adaptable, they satisfy an almost limitless range of requirements.

Let us send you details of their packless, positive-displacement piston action . . . of the absence of packing glands and breakable diaphragms . . . freedom of contact between working parts and flowing liquids. Let us tell you how they will meet your specific requirements for capacity, accuracy, economy, durability and dependability, as those requirements apply to chemical proportioning, food and other processing, laboratory work, water and sewage treatment . . . or to the handling of problem liquids such as acids, volatiles, slurries, etc., in mono- or multi-flow.

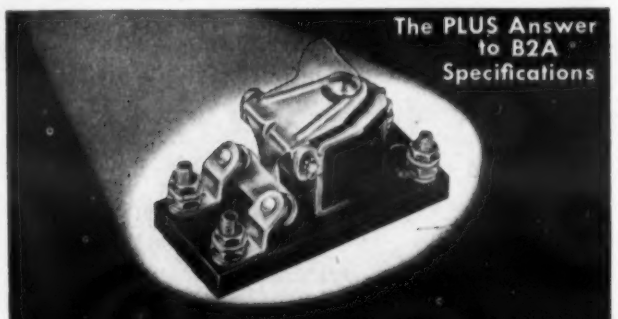


Literature on request.

WILSON CHEMICAL FEEDERS, Inc.

202 CLINTON ST. *Est. 1923* BUFFALO 4, N. Y.

▲ Mention Item NED-6007 when writing ▲



EXTRA HEAVY-DUTY CONTACTS PROVIDE BIG

SAFETY FACTOR

Struthers-Dunn Nutcracker Type 61HXX100 Relays are designed for extreme services, particularly where severe overloads may cause trouble on units on which contacts have a less generous heavy-duty safety factor. Typical applications include controlling aircraft landing lights, or controlling a number of solenoids simultaneously.

These relays are compact and sturdy, have double-break contacts, and meet the latest 94-32185D specifications with contact safety factor to spare. By a simple system of removable links, they may be converted to meet any one of the earlier 94-32185 or 94-32185A, B, or C specifications—or, they can be supplied in a universal type which enables you to make your own adaptation for *any* of these specifications.

STRUTHERS-DUNN, INC., 1321 ARCH STREET, PHILA. 7, PA.

STRUTHERS-DUNN

5,288 RELAY TYPES

▲ Mention Item NED-6008 when writing ▲

Premier

HEAVY DUTY INDUSTRIAL BLOWERS

★ Premier Heavy Duty Blowers range from 1/4 H.P. to 1 H.P.—and cover a range of hundreds of uses in today's busy war production plants. They're equally efficient in both production and maintenance work—and their precision construction and all-around high quality assure trouble-free performance. They are quickly convertible to suction work with available attachments.

Write for descriptive literature, prices, full information

Model No. 66—1/4 H. P.
Model No. 146—5/8 H. P.
Model No. 150— 1 H. P.

Electric Vacuum Cleaner Co., Inc.

1742 Ivanhoe Road • Cleveland 10, Ohio

▲ Mention Item NED-6009 when writing ▲

STEEL CHAIRS & STOOLS

Of all welded tubular steel construction, this line of industrial chairs and stools is available in variety of swivel, adjustable and non-adjustable models. Frame is finished in taupe enamel. Protruding bolts and other sharp surfaces which might catch clothing have been eliminated. Only single bolt adjustment is required in adjustable models which uses sliding tube in each leg. These sliding tubes are zinc plated for rust resistance.

Back rests are curved to fit properly against small of back and thus minimize fatigue. Spring steel uprights are adjustable to suit occupant. Seats are available in formed scroll type or round type and are made of Masonite. Made by **Royal Metal Mfg. Co.**, 189 N. Michigan Blvd., Chicago, Ill.

▲ Mention Item NED-6010 when writing ▲

CONTOUR MILLING

Available without charge for showing at meetings of technical societies and company groups, 30-minute motion picture, "An Exact Duplicate", illustrates many new techniques in Tracer-Controlled milling, engraving, etching and duplicating. All jobs shown were photographed in machine shop. Close-up photography shows all features of work, master and machine. Sound commentary describes each operation. Arrangements for showing can be made by writing to company, giving full information and date desired, together with two optional dates. Issued by **George Gorton Machine Co.**, 1103 Thirteenth St., Racine, Wis.

▲ Mention Item NED-6011 when writing ▲

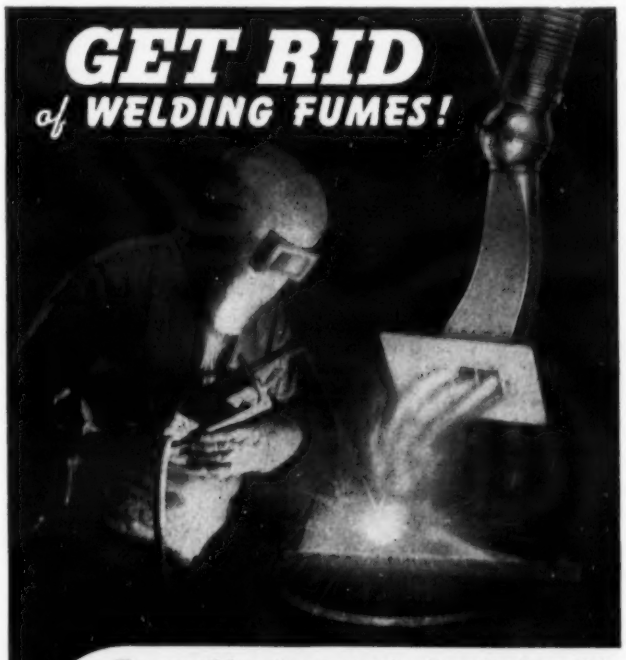
ELECTRIC UNIT HEATERS

Originally developed for use in control and generator rooms for TVA power stations, line of portable electric unit heaters has many other industrial applications. Cold storage plants have found them useful in saving time defreezing coils. Railroads have used them to preheat refrigerator cars in winter before loading canned goods to prevent freezing in transport.

Heating elements used are of standard Electromode construction with sheathed resistor sealed in one-piece finned aluminum casting with motor driven fan mounted directly behind elements. Illustration shows 18-kilowatt capacity heater complete with controls, 50 feet of heavy rubber covered cable and connector. Made by **Electric Air Heater Co.**, 400 S. Byrkit St., Mishawaka, Ind.

▲ Mention Item NED-6012 when writing ▲

GET RID *of* **WELDING FUMES!**



The powerful suction created by Ruemelin Fume Collectors draws out noxious gases, smoke and heat at the source. Cleans shop air with minimum loss of building heat. Covers maximum territory. Guards employee health. More than 1,000 serving war plants all over the nation. Shipped completely assembled, easy to install.

Write for Bulletin 37-C

RUEMELIN MFG. CO., 3383 N. Palmer St., Milwaukee 12, Wis.

RUEMELIN FUME COLLECTOR

▲ Mention Item NED-6013 when writing ▲

FOOD INDUSTRY *PROFITS WITH* **CAMBRIDGE** METAL PROCESSING BELTS

- Bakeries
- Canneries
- Candy
- Dehydrated Foods
- Fresh Produce
- Fruit Packing
- Ice Cream
- Meat Packing
- Packaged Foods
- Quick Freezing
- Sea Foods

Cambridge Belts, flexible lengthwise, but rigid crosswise, permit special treatment of products simultaneously with their movement on the belt. Their open mesh permits free circulations of water, steam, air or heat. Adaptable to all food processing. FREE TECHNICAL Book on request.

THE CAMBRIDGE WIRE CLOTH COMPANY

CAMBRIDGE 13 CAMBRIDGE, MARYLAND

▲ Mention Item NED-6014 when writing ▲

Pyra-Shell

Reg. U.S. Pat. Off.

TRANSPARENT UTILITY BOXES

Stock room storage of important small parts — like the dies for drawing wire shown above — is speeded up and simplified when Pyra-Shell Patented Transparent Utility Boxes are used. While these parts are fully protected against dirt, dust and destructive grit — they are visible at all times, preventing delay in locating any one part instantly.

Pyra-Shell boxes are light in weight but their special patented construction makes them exceptionally sturdy and strong. They are available in a wide variety of standard sizes and compartment arrangements. If one of these standard styles will not meet your particular needs, a special size, style or compartment arrangement can be designed for your particular use.

Write for folder illustrating standard styles. Address— Utility Box Dept. D

SHOE FORM CO. INC.

AUBURN, N. Y.

▲ Mention Item NED-6015 when writing ▲

In 1/50 of a second it stops stock-still

When a plane pilot presses the button to adjust flaps, he wants just so much motion and no more.

But electric motors take time to stop. They overrun.

What you see in the picture is the Lear solution. It is the Fastop Clutch.

With this clutch, controls stop instantly. For it stops stock-still in about 1/50 of a second.

There is nothing else like this Fastop Clutch. It is built right into the unique Lear electric motor.

There will be many new devices in the coming days of peace. Perhaps you are already planning one.

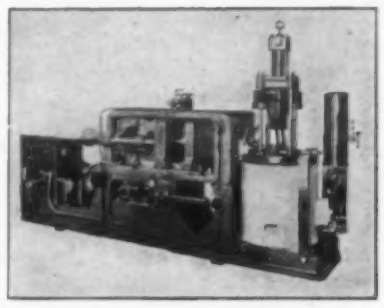
Perhaps you can use a motor like this and the Fastop Clutch. Or any of the other 250 Lear products.

That is why we are telling you about them now. We want you to know that there is available the kind of engineering thinking that made them possible.

LEAR AVIA INC. PIQUA • OHIO

▲ Mention Item NED-6018 when writing ▲

DIE CASTING MACHINES



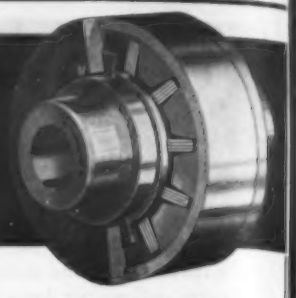
Readily convertible from zinc operation to aluminum and vice-versa, two high speed, high pressure die casting machines are designed for high production of smaller castings. One is intended for zinc, tin and lead alloy work and other for aluminum, brass and magnesium alloys.

Machine for zinc is claimed to be fastest cycling commercial die casting machine built. Without load it operates at 750 cycles per hour and in production it makes 400 to 500 shots per hour, depending upon sizes of casting and rate of chilling. Molten metal is injected by means of submerged plunger and gooseneck injection system, consisting of nitrided alloy steel cylinder, hydraulically actuated plunger with cast iron rings and removable gooseneck and nozzle of heat and corrosion resistant alloy castings. Injection pressures range from 2200 pounds per square inch for a 4-pound casting to 1400 pounds per square inch for a 6-pound casting.

Aluminum die casting machine differs from above unit in that it has cold chamber injection system. Injection pressures of up to 20,000 pounds per square inch are available. Hot metal is delivered into die as slowly as chilling of metal and thickness of casting section will permit, thereby allowing air to escape from die cavity ahead of metal. Made by **Lester-Phoenix, Inc.,** 2711 Church Ave., Cleveland 13, O.

▲ Mention Item NED-6021 when writing ▲

STOP THOSE BUMPS



The CUSHION-TORQUE developed by KANTI-LEVER Couplings absorbs the impact of blows imposed upon your Motors, Gears, Speed Reducers, Ball Bearings, etc. by sudden or reversing loads: likewise it cushions the torsional and radial vibration which in conjunction with impact blows are responsible for most machine failures. Since these are more prevalent when operating long hours at a high rate of production, the KANTI-LEVER is of correspondingly greater value to you. No other Coupling is like the—

Kanti-lever Coupling

It has a circular series of radial resilient Cantilevers made from 200,000 lb. steel that operate in slots, the tapered sides of which decrease the leverage on the Cantilevers under increased load and eliminate backlash. End thrust is impossible. Special endplay available up to four inches with no increase in the Cantilever stresses. Outer periphery can be used as a Brake Drum for quick-stopping machinery. Over 3,000,000 Horse Power in service. SEND FOR BULLETIN No. 28-D.

BROWN ENGINEERING CO.
129 NORTH 3RD ST. READING, PENNA.

▲ Mention Item NED-6024 when writing ▲

NO CUSTOMER COMPLAINTS ... *shipments move when*

MARSH STENCIL MARKED

Millions in shipments are lost because of poor marking. *Stencil-Marked* addresses assure prompt delivery. Unlike tags and labels they can't come off ... regardless of weather or handling. Cut your own stencils with a Marsh Machine. Save up to $600 annually in shipping department. Three sizes to meet Gov't Spec., 1", ¾", ½". Write for FREE booklet, prices.

MARSH STENCIL MACHINE COMPANY, 23 Marsh Bldg., Belleville, Ill., U. S. A.

MARSH

▲ Mention Item NED-6019 when writing ▲

SURFACE GRINDER

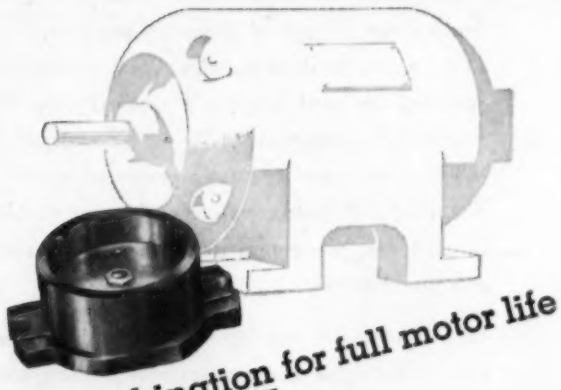
Using standard grit wheels, DoAll Model G-1 surface grinder is capable of producing finish to within 6 micro inches. It is designed especially for toolroom use as well as light production work where accuracy is of prime consideration. Balanced and precision construction is used throughout.

Table travel is 21 inches and transverse travel is 7½ inches with vertical wheel head adjustment of 12 inches when using 7 x ½ x 1¼-inch wheel. Rigidity is assured by column which extends from bottom base up to spindle and is recessed into base. Saddle has large double V-ways and all base surfaces are hand scraped.

Combination hydraulic control eliminates piping usually found in machine of this type. Single control governs five hydraulically actuated movements of machine. Precision ball bearing spindle is direct driven by electric motor. Graduated hand wheel is used for making vertical adjustments. Built-in hydraulic oil reservoir and pump unit is rubber mounted to isolate pump and motor vibration. Automatic pressure lubrication is provided to all ways and moving parts. Made by **Continental Machines, Inc.,** 1314 Washington Ave. S., Minneapolis 4, Minn.

▲ Mention Item NED-6022 when writing ▲

▲ Mention Item NED-6025 when writing ▲



Right Combination for full motor life

Because Klixon Motor Protectors are matched and built into the motors by the motor builder, they give you a tested and proven combination that assures full motor life.

The Klixon Protector provides accurate motor overheat protection. It prevents motors from becoming dangerously hot and burning out ... yet always permits the motor to operate at maximum capacity.

Actuated by a scientifically calibrated thermostatic disc that outlasts the motor, Klixon Protectors cut the power "off" should the motor reach a dangerous operating temperature. When the motor cools to a safe level, the protector clicks the power "on" again, either automatically or by manual reset depending on the type of protector you specify.

Why put up with motor burnouts when you can buy Klixon Protected motors for a small amount extra? They're available for A.C. motors all sizes; D.C. motors up to 30 volts. Play safe! Specify built-in Klixon Protectors with every motor you buy.

KLIXON MOTOR PROTECTORS
SPENCER THERMOSTAT CO., ATTLEBORO, MASSACHUSETTS

▲ Mention Item NED-6020 when writing ▲

Mechanical Alternator FOR CONDENSATE PUMPS

CLASS 9049

The **Class 9049 Mechanical Alternator** provides a simple and positive means of mechanically alternating the operation of two condensate pumps in a duplex system. The function of the device is to provide alternate cycles of operation to assure even wear of the pumping units in such a system. It thus eliminates the evils of long standby for one of the two pumping units. The Class 9049 device further provides the additional function of starting the "second" pump in cases where extra capacity under peak conditions is required. For bulletin, address Regulator Division, Square D Company, 6060 Rivard St., Detroit 11, Michigan.

ELECTRICAL RATINGS

Voltage	Single Phase A.C.	Polyphase A.C.	D.C.
110V.	1 H.P.	2 H.P.	½ H.P.
220V.	2 H.P.	3 H.P.	½ H.P.
550V.	2 H.P.	3 H.P.	.....
32V.	.....	.....	¼ H.P.

SQUARE D COMPANY
DETROIT • MILWAUKEE • LOS ANGELES

▲ Mention Item NED-6023 when writing ▲

Peerless MARINE TYPE MOTORS AC & DC

PEERLESS motors for marine service are manufactured in AC and DC up to 3 horsepower. Frames are cast iron or of all-steel construction (no cast iron or aluminum parts).

Also DC generators and motor generator sets consisting of DC generators with either AC or DC driving motors.

Peerless DC marine type motor for close coupled direct connected pumps, ½ to 3 h. p.

Peerless fractional h. p. DC marine type drip-proof motor.

THE Peerless ELECTRIC COMPANY
WARREN, OHIO
Established 1893

▲ Mention Item NED-6026 when writing ▲

WRITE TODAY FOR DATA ON THE NEW GROVE FLEX-FLO VALVES

Ask for Bulletin 800 Describing This Unique Expansible Tube Type Valve. Operates by various systems of Remote Control

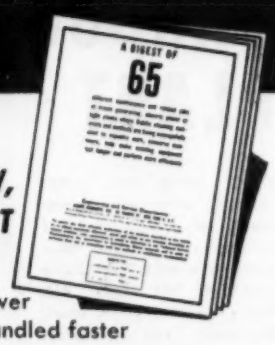
EXPANDS TO OPEN ★

★ CONTRACTS TO CLOSE By Remote Control

GROVE REGULATOR COMPANY
6535 GREEN STREET, OAKLAND 8, CALIFORNIA
Branch Offices: 30 Rockefeller Plaza, New York 20
5644 Navigation Boulevard, Houston 11, Texas
1930 West Olympic Boulevard, Los Angeles 6, California

▲ Mention Item NED-6027 when writing ▲

65 Ways to Expedite Power Plant Maintenance



DESCRIBED IN NEW, FREE OAKITE DIGEST

Today, maintenance of power plant equipment must be handled faster ... shut-down time minimized and manpower conserved. That's why Power Plant Engineers should have this NEW 16-page DIGEST!

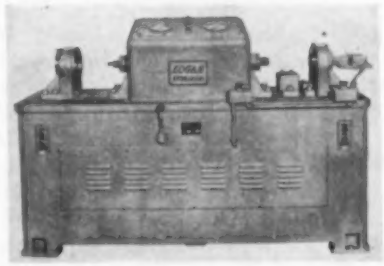
It describes effective, fast, economical Oakite techniques for cleaning heat exchangers, de-scaling Diesel cooling systems, cleaning steam condensate meters, stripping paint from transformers before repainting ... and 61 other essential, commonly recurring power plant maintenance jobs. YOUR copy is FREE ... write TODAY!

OAKITE PRODUCTS, INC., 32G THAMES ST., NEW YORK 6, N. Y.
Technical Service Representatives in All Principal Cities of the United States and Canada

OAKITE CLEANING
MATERIALS · METHODS · SERVICE — FOR EVERY CLEANING REQUIREMENT
Buy Bonds for Victory

▲ Mention Item NED-6028 when writing ▲

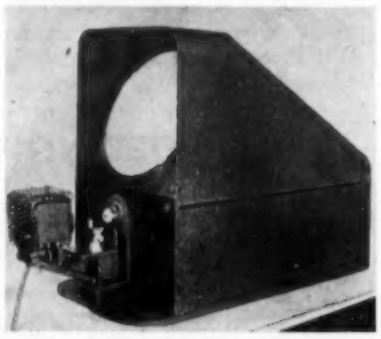
GAGING & ASSEMBLY PRESS



Performing dual function of press fitting splined shaft into splined hole of a disc shaft part at predetermined but adjustable pressure and disassembly for teardown inspection after initial run of engine, this hydraulic gaging and assembly press is designed for aircraft manufacture. Right hand side of machine is for assembling and left hand for disassembling operations. Electric push buttons and hand levers are used to control operations. Work holding fixtures with interchangeable locating bushings and collars for different work pieces are provided. Made by **Logansport Machine Co.**, 1935 Payson Rd., Logansport, Ind.

▲ Mention Item NED-6029 when writing ▲

OPTICAL PROJECTOR

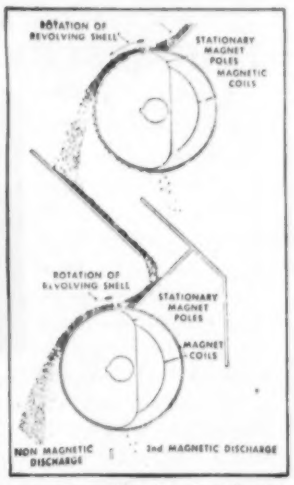


Of bench type, model P2.5 optical projector features simplicity of operation and setup so that it can be used readily for wide range of inspection work. Optical system consists of optical lens components combined with correct light source to provide good screen image definition at all magnifications. Production speed of inspection is possible through use of staging V-blocks or inexpensive holding fixtures.

Working screen measures 14½ inches. Magnifications of 10, 25, 50 or 90 diameters can be furnished. Equipment operates directly from 110-volt lighting circuits. Made by **Portman Optical Co.**, 70 Mill Rd., New Rochelle, N. Y.

▲ Mention Item NED-6030 when writing ▲

MAGNETIC SCRAP SEPARATOR



Ferrous and nonferrous scrap are readily separated with this improved double drum, high intensity magnetic separator. High temperature windings on coils are capable of withstanding flaming hot aluminum chips. Outboard bearings on drum shafts are readily accessible for inspection or removal. Either drum can be removed without dismantling unit. Bearings are of dust-sealed, anti-friction type and are accessible and lubrication is supplied by pressure feed system. Capacity of 24-inch width model is 5000 pounds of aluminum borings per hour. Made by **Dings Magnetic Separator Co.**, 698 E. Smith St., Milwaukee 7, Wis.

▲ Mention Item NED-6031 when writing ▲

LOOK INTO GAST ROTARY PUMPS and COMPRESSORS

The further you "look into" Gast, the more you will become convinced that Gast Rotary Design offers you unequalled advantages in maintenance and operating economy, space and weight saving, and trouble-free performance because of the construction features indicated here.

That is why we say, if you have immediate — or post-war need for vacuum or compressed air (pressure below 30 lbs.) on any application, "Look into Gast Rotaries".

Start right now by sending for your copy of the new descriptive folder," Industry's Trend to Air for Power". Address

Gast Mfg. Corp.,
115 Hinkley St.
Benton Harbor
Michigan.

GAST ROTARY AIR
MOTORS • COMPRESSORS
VACUUM PUMPS

▲ Mention Item NED-6032 when writing ▲

ITS BITE CONVINCED ME

5 times faster! 500% more production! That's all *I* needed to know. Equal or even better results may come *your* way if you'll try greater feeds and depth of cuts and push the Por-os-way wheel to the limit. It's amazing how this open-structure wheel increases production, how it cuts cool and deep and resists loading through natural "chip clearance," how the same wheel rough grinds and precision finishes. Send today for the Por-os-way booklet "Facts About Por-os-way."

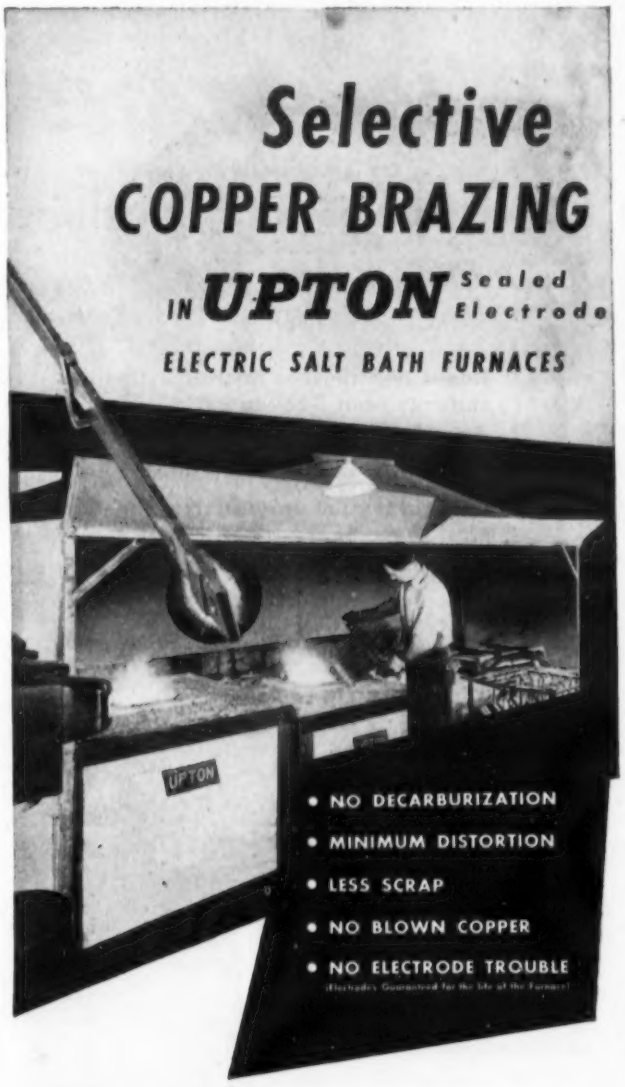
A. P. DE SANNO & SON, INC.
446 Wheatland Street,
Phoenixville, Penna.
SINCE 1893
*T. M. Reg. U. S. Pat. Office
Copyright, 1944
A. P. de Sanno & Son, Inc.

2 TO 5 TIMES MORE PRODUCTION PER MAN PER MACHINE

RADIAC*
POR-OS-WAY*
NEW YORK • CHICAGO • PITTSBURGH
CLEVELAND • DETROIT • LOS ANGELES

▲ Mention Item NED-6033 when writing ▲

Selective COPPER BRAZING IN UPTON Sealed Electrode ELECTRIC SALT BATH FURNACES



Selective Brazing of ordnance part subjected to intense impact is being handled at high speeds in Upton Electric Salt Bath Furnaces.

These same furnaces are being used, alternately, for high speed steel hardening and copper brazing.

When inquiring for additional information, please give complete details on your problem so that our answer to you can be complete.

See a battery of Upton furnaces in operation. In Detroit there is an installation of Upton Electric Salt Bath Furnaces kept in operation for your inspection.

Upton ELECTRIC FURNACE DIV.
COMMERCE PATTERN FOUNDRY AND MACHINE COMPANY
7439 Melville at Green Detroit 15, Michigan

▲ Mention Item NED-6034 when writing ▲

NEW PRICE LISTS ON CARBIDES

Effective March 1, 1944 — Price List — Standard and Non-Standard Tips — Firth-Sterling Steel Company

Effective March 1, 1944 — Price List — Stock General Purpose Tools — Firth-Sterling Steel Company

FIRTHITE TIPS

FIRTHITE TOOLS

Firth-Sterling STEEL COMPANY McKEESPORT, PA.

▲ Mention Item NED-6035 when writing ▲

Consider These

9 ADVANTAGES of the Sunnen Precision Honing Machine for INTERNAL FINISHING

1. Hones and finishes internal cylindrical surfaces from .185" to 2.625"
2. Accuracy is guaranteed within .0001"
3. Produces a super-smooth finish
4. Used in ferrous or non-ferrous metals, plastics, ceramics, glass, etc.
5. Accurately duplicates sizes
6. Does not require skilled labor
7. Can be "set-up" for any size in one minute
8. No jigs or fixtures needed
9. Economical to operate

Some recent refinements add to the accuracy and efficiency of the Sunnen Precision Honing Machine. A new base and coolant pump has been added that provides a constant flow of honing fluid to the work. A machine light makes inspecting and gaging parts easier.

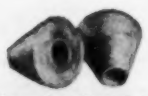
Yet, with all these advantages, the Sunnen Precision Honing Machine is low in cost. Let a Sunnen engineer give you complete information — or write for free catalog.

The coveted Army-Navy "E" waves over the Sunnen plant, evidence of the important part Sunnen equipment is playing in the war effort.

SUNNEN PRODUCTS COMPANY
7931 Manchester Avenue, St. Louis 17, Missouri
Canadian Factory: Chatham, Ontario

SUNNEN

Typical Jobs



Cones for Wheel Balancing Machine "Accurately align hones two interrupted surfaces."

Diesel Engine Fuel Injector Cylinder "So accurate that a piston can be fit within .00005 inch."

Saved time in producing a smooth, accurate finish on this bronze remote control valve body.

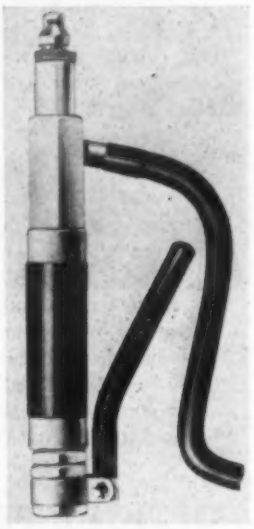
Hydraulic Two-Way control valve. Hole is honed to eliminate leakage.

Bronze Valve. The Sunnen method of honing is used to secure a high finish and accuracy.

Aircraft Valve Guide. Valve tappet roller pin hole honed to 6 micro inch finish.

▲ Mention Item NED-6036 when writing ▲

SPRAY-CLEANING GUN

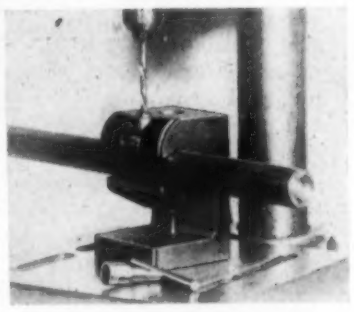


Usable either as blow gun, spray gun, suction gun, or cleaning gun, this blow gun is versatile industrial tool. It operates directly on shop air line. As spray gun it handles cold water paints, lamp black solutions and other fluids. Lifting capacity is 2 gallons per minute with 70-pound air pressure. Tool is converted to suction cleaner by removing nozzle and dropping suction hose into mold or other location. Sand blasting operations are possible with high air pressure.

Only three working parts are used and flexible handle facilitates use. Nozzle is adjustable, permitting any size of spray. Injector forces air stream directly across intake valve to give high volume delivery. Gun is made in ¼, ⅜ and ½-inch sizes, each being furnished with 8 feet of Neoprene fluid suction hose. Made by **Lonn Mfg. Co.**, 131 E. New York St., Indianapolis 6, Ind.

▲ Mention Item NED-6037 when writing ▲

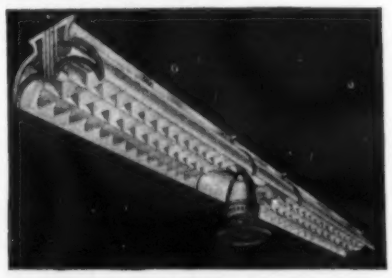
WORK HOLDING VISE



Affording accurate cross-center drilling of round stock, this center drill and mill vise may also be used for holding hexagon stock. Bushings, through which drill is guided, are interchangeable for wide range of hole sizes. Clamping action is by opposed jaw principle so that one side of work is exposed for slot milling. All exterior surfaces are precision ground and parallel for accuracy in mounting on any type of machine tool. Made by **Universal Engineering Co.**, 2230 National Ave., San Diego 2, Calif.

▲ Mention Item NED-6038 when writing ▲

FLUORESCENT FIXTURE



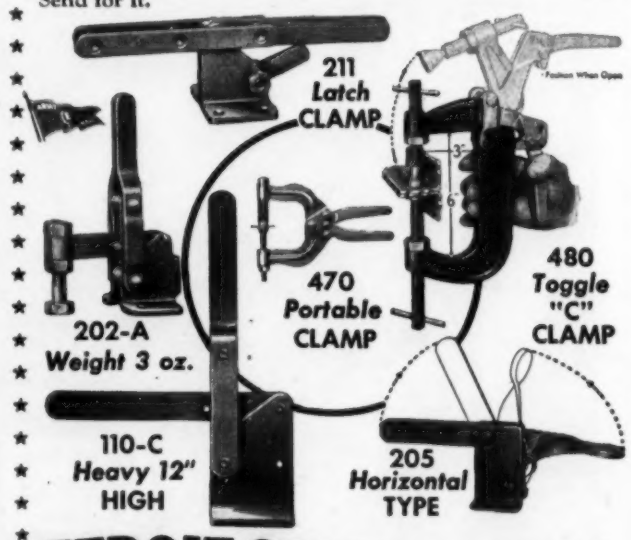
Heretofore restricted because of WPB limitations, Futurliter continuous row fluorescent luminaire is again available. It is made for two to three rows of 40-watt lamps and can be mounted directly on ceiling or suspended. It provides high intensity shielded illumination.

This fixture is available with cooling sections as shown in illustration, with air disinfection sections utilizing germicidal lamps and with color improving sections wherein filament lamps supplement light from fluorescent lamp. Made by **The Edwin F. Guth Co.**, 2603 Washington Blvd., St. Louis 3, Mo.

▲ Mention Item NED-6039 when writing ▲

Building JIGS or FIXTURES?

Then you'll need some of those quick acting, positive holding, De-Sta-Co Toggle Clamps . . . Bulletin No. 43 will help you select the clamps best suited to your job. Send for it.



DETROIT STAMPING CO.
Established Over 25 Years
360 Midland Ave • Detroit 3, Mich.

▲ Mention Item NED-6040 when writing ▲

No Shortage of IDEAL RECHARGEABLE STORAGE BATTERIES for FLASHLIGHTS

Make sure of a future battery supply for your flashlights, with Unrestricted IDEAL Rechargeable Storage Batteries. They can be recharged again and again at convenient intervals, thus providing an "always fresh" battery, and a bright, steady, dependable light . . . Conserve Critical Materials.

Outlasts 400 Dry Cells!

With one IDEAL Rechargeable Storage Battery in heavy service, as much as $10 a year can be saved on each flashlight. IDEAL Storage Batteries fit any standard size flashlight cases using 1¼" size D dry cells. Many thousands in use in leading utility and industrial plants. Chargers for recharging the IDEAL Battery available in 1, 6 or 12-cell sizes. *Prompt Deliveries.*

Write for Bulletin BB 444

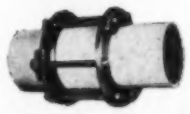
GUARANTEED

IDEAL Sycamore
IDEAL COMMUTATOR DRESSER CO
1032 Park Avenue Sycamore, Illinois
Sales Offices in all Principal Cities

▲ Mention Item NED-6041 when writing ▲

DRESSER REPAIR CLAMPS

STOP LEAKS

COLLAR CLAMP	SCREW-FITTING CLAMP
 ends costly losses through threads of screw collars.	saves valuable line contents when screwed fittings leak.
BAND CLAMP	**SPLIT REPAIR CLAMP**
quickly repairs pinhole and other small leaks in pipe.	efficiently mends splits and pitted sections in pipe.

ALSO Bell-Joint Clamps and Weld Repair Clamps. Specify pipe O.D. and service when ordering.

DRESSER MANUFACTURING COMPANY
BRADFORD, PA.

▲ Mention Item NED-6042 when writing ▲

SPEED MATERIALS THROUGH THE PLANT

Are stairs and ramps slowing down your movement of materials and products from one floor level to another? A Globe Platform Lift puts ALL floors on the same level. Workmen roll materials onto the Lift at one level, push a button, and the Globe Lift quickly, safely raises or lowers them to the next floor level. Saves time. Saves breakage. Saves accidents. Saves space of ramps and stairs. Installed anywhere quickly, inexpensively. Send for illustrated circular.

Write Today
for illustrated Bulletin K-12.

GLOBE HOIST COMPANY
Philadelphia 18, Pa. — Des Moines 6, Iowa

GLOBE LIFTS and ELEVATORS

▲ Mention Item NED-6043 when writing ▲

SYNTRON

"Pulsating Magnet"

ELECTRIC VIBRATORS

with Adjustable Power

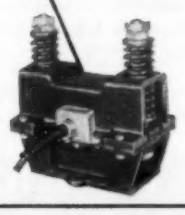
Assure FREE FLOWING Bins, Hoppers and Chutes

Eliminate costly coal stoppages, by preventing "arching-over" and "hanging-up".

Available in eight sizes — from a little 4 lb. model up to a big 500 lb. model.

Write us about your problem

SYNTRON CO.
405 Lexington Ave.
Homer City, Pa.



▲ Mention Item NED-6044 when writing ▲

ESS SMOKE and COMBUSTION INDICATORS, CONTROLLERS and RECORDERS

ESS INSTRUMENT CO., Fort Lee, N. J.

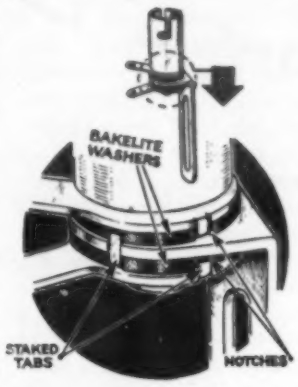
Indicators, Controllers and Recorders for SMOKE & COMBUSTION ... SPECIFIC GRAVITY ... TURBIDITY ... FLAME FAILURE ... INDUSTRIAL and SAFETY APPLICATIONS

Write for catalog

▲ Mention Item NED-6045 when writing ▲

PILOT LIGHT ASSEMBLIES

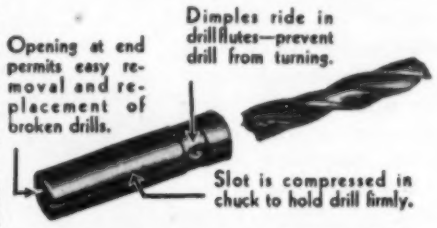
Eliminating possibility of short circuits, improvement in line of pilot light assemblies makes sockets permanently anchor-tight. Shell, bracket and lugs are secured permanently by tab and notch devices, as shown. This feature is available in miniature screw, miniature bayonet or candelabra type socket assemblies which may be furnished complete with lamp. Made by **Dial Light Co. of America, Inc.**, 900 Broadway, New York 3, N. Y.



▲ Mention Item NED-6046 when writing ▲

BROKEN DRILL HOLDER

Use of broken drills which formerly had to be discarded is made possible with C-B Drill-Saver. This device is slipped on broken end of drill and is chucked-up. Slot which compresses when holder is in chuck and two dimples which ride in drill flutes hold drill firmly and prevent it from turning. Opening at opposite end permits easy removal and replacement of broken drills.

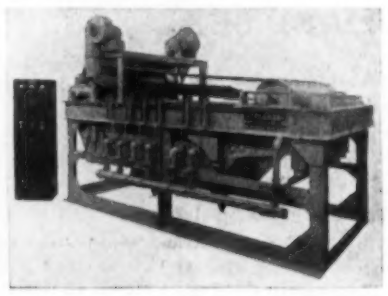


Device is made in five sizes to accommodate five standard size drills: Nos. 51, 41, 30, 21 and 11. They are sold only in sets of five, one of each size to a set, at $1.95 per set. Made by **C-B Tool Co.**, 3444 Wabank Rd., Lancaster, Pa.

▲ Mention Item NED-6047 when writing ▲

MAGNETIC SEPARATOR

Concentrating of ores and minerals by wet process is performed by type MWI magnetic separator. Material enters simple enclosed spout and controlled water pressure feed. This creates high disseminating effect to spread material in thin, uniform layer to underside of submerged moving belt. Here it is picked up by intercepting magnetic field and carried through successive magnetic zones controlled individually by rheostats which provide clean product of concentrates, middlings and tails.



Water sprays control direction and amount of flow to prevent contamination of material from floating impurities. Design of magnet pole pieces subject material to zigzag movement as well as rolling, cleansing action while in process. Magnet poles and belt are submerged. Magnets are not submerged but are protected against physical damage and water splash by metal jackets which provide ventilation through complete air circulation. Made by **Stearns Magnetic Mfg. Co.**, 653 S. Twenty-eighth St., Milwaukee 1, Wis.

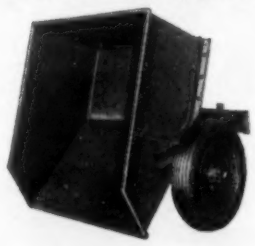
▲ Mention Item NED-6048 when writing ▲

PHIL-DUMP TRAILERS now ride on air!

PNEUMATIC TIRES insure
- Greater Maneuverability
- Faster Haulage
- Longer Life
- More Accessibility

They're Pneumatic 600:16 equipped!

PHIL-DUMP construction includes the roll-over type...quick return to normal position...chain release... Timken Bearings ... welded steel construction. 1 cubic yard capacity.



Get the PHILLIPS facts

PHILLIPS MINE AND MILL SUPPLY COMPANY
MANUFACTURERS SINCE 1863
PITTSBURGH, PENNA.
Mine and Industrial Cars—Fabricated Steel—Iron Castings

▲ Mention Item NED-6049 when writing ▲

America's biggest, heaviest bench mill for only $350.00

Diamond MODEL B-12 BENCH MILL

- Spindle speeds approximately 100-1400 r.p.m.
- Recommended motor size, 1-1½ h.p.
- 12" longitudinal table travel.
- 9" vertical clearance between spindle center and table.
- Full line of accessories: power table feed, vertical head, coolant system, etc.

DIAMOND MODEL B-12 gives maximum capacity and power per dollar expended. Available on M.R.O. Write for complete specifications.

Weight 435 lbs.

DIAMOND TOOL COMPANY
3424 East Olympic Blvd., Los Angeles 23, Calif.

DIAMOND DTCo

Manufacturers of the DIAMOND Line of Precision Milling Machines and Accessories

▲ Mention Item NED-6050 when writing ▲

KEY-TITE SEALER NEVER "FREEZES" IN THE JOINT

This "elastic" sealing compound remains unchanged by age or temperature. Joints can be easily disconnected after years of service, without distortion or force.

Key-Tite spreads easily. It requires no mixing or thinning. One pint, weighing about 1½ pounds, covers as much surface as six pounds of red lead sealers, and therefore costs less per job.

Use Key-Tite, the economical, waterproof sealer, on all lines carrying water, gas, steam, compressed air.

May we send you a generous sample?

KEY COMPANY
EAST ST. LOUIS, ILLINOIS
2601 McCASLAND AVENUE

▲ Mention Item NED-6051 when writing ▲

DOUBLE the Cutting Life of Your Saws!

Why do saws break out teeth, crack, or lose their temper? Nine times out of ten because they are used when too dull or imperfectly filed. They get too hot,—and the trouble starts.

The Foley *Automatic* Saw Filer files saws so much faster you can always work with sharp saws, which not only prolongs saw life but increases power saw output from 25% to 40%. Saws are *automatically* jointed as filed, keeping all teeth even in size, shape, spacing. Foley-filed saws run so smooth, true and cool that breakage is practically eliminated. If your saws are hand-filed,—investigate!

ONE MACHINE FILES ALL SAWS

The Foley Automatic Saw Filer is the ONLY machine that files cross-cut circular saws 3" to 24" in diameter, band saws up to 4½" wide,—all hand saws. Simple attachments come with the machine for each type of saw. A Foley Automatic Saw Filer can be purchased under a CMP-5 MRO.

30-DAY TRIAL IN YOUR OWN PLANT

You may have the privilege of a 30-day trial in your own shop, on your own work. Actual use of Foley-filed saws is more convincing than anything we can say.

FOLEY Automatic SAW FILER

FOLEY MFG. CO. 23 2nd Street N. E. Minneapolis 13, Minn.

Please send literature on the Foley Automatic Saw Filer and details of your 30-Day Trial.

Name.....

Address.....

▲ Mention Item NED-6052 when writing ▲

CRESFLEX
NON-METALLIC SHEATHED CABLE

FACTORY ASSEMBLED AND TESTED

EASILY INSTALLED AT LOWEST COST

TOUGH PAPER ARMOR

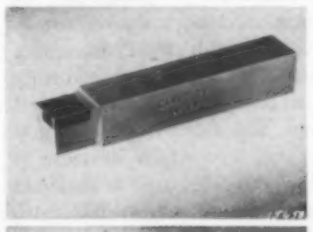
WEATHERPROOF FLAME-RETARDING JACKET

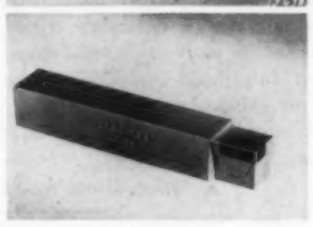
PARTICULARLY SUITED FOR WIRING FARM BUILDINGS, WAR-HOUSING

CRESCENT INSULATED WIRE & CABLE CO.
TRENTON, N. J.

▲ Mention Item NED-6055 when writing ▲

CARBIDE TIPPED TOOLS





Added to regular line of carbide tipped tools, illustrated ¼-inch tool is available in style 4 and style 7 right and left hand standard turning tools for use on high speed precision lathes. These standard tools are available from stock in grade 78 for steel cutting and grade 883 for all other materials. Shank measuring ¼ inch square is 1½ inches long. Standard package contains twelve tools. Made by **Carboloy Co.**, 11163 E. Eight Mile Rd., Detroit 32, Mich.

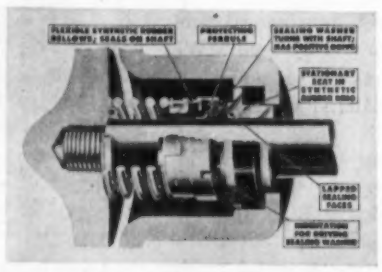
▲ Mention Item NED-6058 when writing ▲

TURRET TOOL POSTS

Multiple machining operations are possible on lathes having 16-inch swing and larger through use of this 6-inch square turret tool post. Rigidity under heavy cuts using larger tools at high speeds is provided by 5-inch center post. Turret block holds up to 1¼-inch tool bits or No. 2 tool holders for ⅜-inch square bits. Indexing mechanism is self-contained and there is no chip interference. Mac-it tool post screws are standard. Made by **Enco Mfg. Co.**, Dept. 60, 3320 Montrose Ave., Chicago, Ill.

▲ Mention Item NED-6059 when writing ▲

SHAFT SEAL



Adaptable to broad range of rotary shaft equipment, this John Crane shaft seal is of bellows type. Its use eliminates stuffing box leakage and provides perfect sealing on centrifugal pumps, refrigeration compressors, speed reducers, rotary pumps, agitators and other rotary sealing applications. It is claimed to provide trouble-free performance, even at high speeds and high pressures.

As shown, it consists of flexible synthetic rubber bellows, tail end of which grips and seals along shaft; stationary floating seat, held in synthetic rubber sealing ring; and positively driven sealing washer which turns with shaft and is held against stationary seat by spring pressure. Contacting faces of washer and seat are lapped to form leakproof seal.

There is no compression packing to freeze shaft. Synthetic rubber used is resistant to oil; hydrocarbons, refrigerants, water and anti-freeze solutions. Made by **Crane Packing Co.**, 1816 Cuyler Ave., Chicago 13, Ill.

▲ Mention Item NED-6060 when writing ▲

FIGHTS ITS WAY IN *FAST!*

Lubri-Tasgon works its way through carbon, sludge, and gummy oil to lubricate thoroughly the tight spots and bearings ordinary oils don't reach. Protects trouble spots—keeps bearings from running hot—saves wear and tear on machinery and the need for new parts. Use Lubri-Tasgon alone as a penetrating lubricant or combine with other oils for new or light machinery. At leading mill supply houses or send 10c for sample can. Samuel Cabot, Inc., 1421 Oliver Bldg., Boston 9, Mass.

LUBRI-TASGON
PENETRATES! LUBRICATES!

▲ Mention Item NED-6056 when writing ▲

because we cut felt parts
from our own felt
on our own designed dies
we can give you precision cutting
that meets your specific requirements

THE FELTERS CO., 210-I SOUTH ST., BOSTON, MASS.

▲ Mention Item NED-6057 when writing ▲

COMPACT—EASY TO MOUNT—EASY TO WIRE—PROVIDES ACCURATE SPEED REGULATION

This control has all the advantages of the well-known EC&M Control for *cab-operated* cranes. All motions can be controlled from a single, pendant, master-station complete with Pilot Light, Reset Button, and Emergency Stop, Toggle Switch, and two Push Buttons for each motion. Individual rope-operated Master Switches for the various motions are optional. Ask for Bulletin 922.

THE ELECTRIC CONTROLLER & MFG. CO.
2698 E. 79th ST. CLEVELAND 4, OHIO

▲ Mention Item NED-6061 when writing ▲

Taking War in its Stride
Transport Gliders
and HANSEN ONE-HAND TACKERS

AIRPLANE manufacturers, in need of a plentiful supply of materials and a fast, low-cost way of assembling them, adopted plywood to build their airplanes and Hansen one-hand Tackers to tack the plywood in place.

Hansen Tackers save time, effort and materials—in building transport gliders, trainers, speedboats, landing barges, radio equipment housings—tacking foundry molds, padding electronic parts for shipment, tagging army truck tires, labeling ammunition boxes, etc.

Take your production tacking, fastening, assembly—in stride—with Hansen. *Request details.*

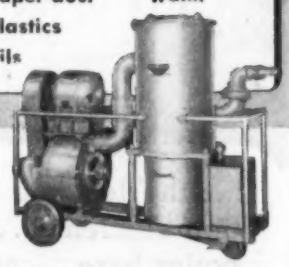
ASK FOR FOLDER T-31

HANSEN TACKERS STAPLES A. L. HANSEN MFG. CO.
5164 RAVENSWOOD AVE., CHICAGO 40, ILL.

▲ Mention Item NED-6062 when writing ▲

INVINCIBLE
VACUUM UNITS Remove or Reclaim:

bolts	fly ash	ravelings
broken glass	fly lint	rivets
carbon black	foods	sand
chemicals	frit	sawdust
coal dust	grains	silica dust
cotter pins	grindings	soap
cork	lead	shot
crushed stone	liquids	soapstone
dirt	metal dusts	talc
explosives	paper dust	water
fabricated parts	plastics	
fertilizer	oils	



The extra heavy-duty Industrial Master Truck (5 H. P.)

These are only some of the materials successfully handled by Invincible Vacuum Machinery—for they will pick up almost any substance that can pass through a vacuum hose.

If you have a problem in removing, reclaiming, or conveying material, write us fully about your problem—no obligation.

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

▲ Mention Item NED-6063 when writing ▲

Thermoswitch
Built to be Hung

Sealed with long extension conduit which is easy to bend this Thermoswitch is much used in Laboratory and manufacturing fields where total submersion is required.

With ±1/10° sensitivity and a range from minus 100° to plus 600° F. the Thermoswitch is today's most efficient heat (and cold) control. Rated 10a. 115v.

Write for new Catalog.

The Submersion Thermoswitch

Fenwal INCORPORATED
70 PLEASANT ST., ASHLAND, MASSACHUSETTS

▲ Mention Item NED-6064 when writing ▲

REPLACE *your worn-out, overworked* BELT CONVEYOR PARTS

Belt Conveyor machinery is working over-time. Parts are wearing out. Examine your equipment for the places that threaten to go. Order replacement parts at the first signs of wear. You will avoid costly breakdowns.

Robins Replacement Parts work well in—and increase the efficiency of—any Belt Conveyor System. Robins Idlers, Pulleys, Bearings, Pillow Blocks, Takeups, Holdbacks and other essentials are all described in Bulletin 82-NED-10. Write for it.

For Material Aid in Materials Handling

...It's ROBINS

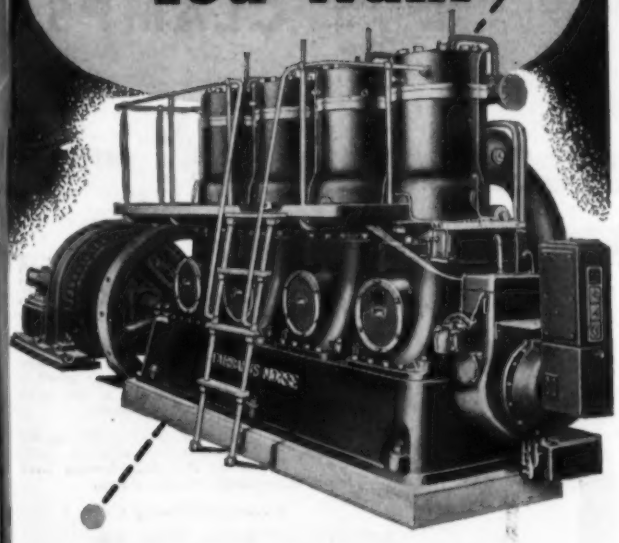
ENGINEERS • MANUFACTURERS • ERECTORS

ROBINS CONVEYORS INCORPORATED
Founded in 1896 as Robins Conveying Belt Co.
PASSAIC • NEW JERSEY

MATERIALS HANDLING MACHINERY

▲ Mention Item NED-6065 when writing ▲

If It's POWER You Want



A Fairbanks-Morse Diesel Is Your Answer

Here's real power! Dependable power . . . low-cost power . . . sustained power.

Fairbanks-Morse Diesels deliver the kind of power that counts. It's power that goes on year after year. It's power that's generated under constant heavy-duty service.

And Fairbanks-Morse Diesels have set records for low cost in fuel consumption and maintenance.

Designed and built on the two-cycle principle, Fairbanks-Morse Diesels have fewer moving parts to wear. Then there's less wear on those parts because of slower operating speeds.

If you need more power . . . and lower cost power, why not have a Fairbanks-Morse engineer study your problem. There is no obligation . . . there may be many benefits. Write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

Branches and service stations throughout the United States and Canada.

BUY WAR BONDS

FAIRBANKS-MORSE
DIESEL ENGINES, PUMPS, MOTORS, GENERATORS, WATER SYSTEMS, SCALES, STOKERS, FARM EQUIPMENT, RAILROAD EQUIPMENT
Diesels

▲ Mention Item NED-6066 when writing ▲

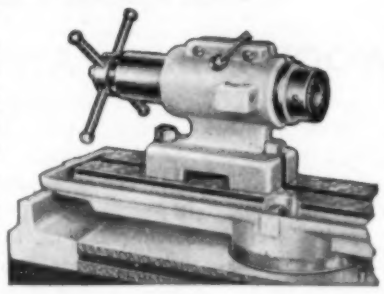
SPOUT MAGNETIC SEPARATOR

Used in milling, feed and grain trade for elimination of tramp iron to protect crushers, grinders and other machinery, this Super Class AAA spout magnet also purifies the product and affords safety to workers. Positive acting armature insures opening and closing of tramp iron discharge gate under fully automatic control. Gate opens when current is shut off and closes when current is turned on. Effective separation is afforded by strong magnet. Bronze bearings are used on gate actuating rods. Tramp iron wells provide high intensity, double pass magnetic action on material and louvre type non-magnetic side plates afford ample ventilation to cool coils while excluding injurious particles. These spout magnets are available in widths from 8 to 20 inches but can be furnished in larger sizes for coal and other industrial applications. Made by **Stearns Magnetic Mfg. Co.**, 653 S. 28th St., Milwaukee 4, Wis.

▲ Mention Item NED-6067 when writing ▲

TAP GRINDING FIXTURE

Adaptable for use on all tool grinders, this tap grinding fixture makes possible grinding of relief, grinding flutes and salvaging broken taps. All necessary operations can be performed with single set-up. Two, three, four, five and six flute taps can be ground either right or left, in sizes from No. 8 to 2½ inches in diameter. Maximum accuracy is obtained through use of collets. Made by **K. O. Lee Co.**, Aberdeen, S. Dak.



▲ Mention Item NED-6068 when writing ▲

PIPE & CONDUIT GAGE

Improved in design so that all sizes of electrical conduit and thin-wall metallic tubing can be measured, as well as pipe from ⅛ to 12 inches in diameter, this Three-Point gage is of pocket size and is easy to use. It consists of two pivoted steel plates with edges curved at three points for contact with tubing or pipe. Scales register conduit, tubing, pipe and tap drill sizes. Inch and metric rules are included on device. List price is $1.50 each and $2 with leather case. Made by **Three-Point Gage Co.**, 3821 Broadway, Chicago 13, Ill.

▲ Mention Item NED-6069 when writing ▲

For PERMANENTLY SEALED Insulated Piping —specify RIC-WIL PREFABRICATED INSULATED PIPE UNITS...

Insist on these RIC-WIL Features

Welded Lock Seam

Expanded Smooth Ends

Improved Drive Coupler

When you specify Ric-wiL you are assured an insulated pipe system that is permanently weather-tight. Improved design incorporates exclusive engineering features, three of which are illustrated at the left . . . Ric-wiL Prefabricated Insulated Pipe Units are factory tailored to job specifications. Minimum skilled labor is required to make field-closures of 21-foot sections. Installation—overhead or underground—can be completed in record time. Prefabricated elbows, tee branches, reducers, expansion loops, gland seals and other accessories are available—fitted with couplers for quick assembly with straight units. Each unit is factory pre-sealed, assuring dry insulation. Entire system can be dismantled and relocated without loss or damage.

Write for Bulletin 4404 giving detailed information on the improved Ric-wiL Prefabricated Insulated Pipe Units, and their application to your piping projects.

RIC-WIL INSULATED PIPE CONDUIT SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, OHIO

▲ Mention Item NED-6070 when writing ▲

Rapid **LETTER and DESIGN STENCILING** takes the place of stamping steel numbers and letters.

ENTIRE FORM ON ONE STENCIL

LABOR SAVING ON CASTINGS, STAMPINGS, FORGINGS ON ALL METALS, PLASTICS, HARD RUBBER, BAKELITE, GLASS • SMALL LOTS OR HIGH PRODUCTION

Cleaning of Scale before Machining, Plating or Painting.
Matt Finishing or Frosting for Coloring effect.
Stencilling Letters or Designs.

Leiman Bros. Continuous Feed SANDBLAST USING SAND OVER AND OVER

•

Mass Production or Small Lots LEIMAN BROS.

167 CHRISTIE ST. NEWARK, N. J.

▲ Mention Item NED-6071 when writing ▲

HOLTZER-CABOT ELECTRONIC INSULATION RESISTANCE TESTER

SPOTS FAULTY INSULATION

You can guard against possible insulation failures in electrical circuits and equipment by testing with the Holtzer-Cabot Insulation Resistance Tester. This portable self-contained unit spots faulty insulation before it can become dangerous.

The Holtzer-Cabot Insulation Resistance Tester requires no batteries or external power supply. It is always ready to use in the plant, laboratory or field. The hand generator delivers 500 volts testing voltage regardless of cranking direction. Range is from 0 to 100 megohms. Write for bulletin, today.

HOLTZER-CABOT
Division of First Industrial Corporation
400 STUART STREET, BOSTON 17, MASSACHUSETTS

▲ Mention Item NED-6072 when writing ▲

Eliminate the "Bugs"—with Correct Springs

★ The "bugs" in a product can often be traced to improper springs. Therefore, work closely with Muehlhausen's experienced engineers and be sure of the *right* springs, correctly designed for every application—springs that will function accurately under all conditions—that may lower costs, save space, and improve the product's design. Write or wire your problem today. MUEHLHAUSEN SPRING CORPORATION, 550 Michigan Ave., Logansport, Ind.

To improve product performance, use

MUEHLHAUSEN Designed SPRINGS

▲ Mention Item NED-6073 when writing ▲

New Telephone RELAY by GUARDIAN

Series 405 D. C. (Long)

Available also in Series 415 (short)

★ This Telephone Type Relay by Guardian—series 405 D.C.—is an "all-purpose" unit that may be engineered to fit almost any relay application.

Flexible in operation, series 405 may be built to operate at high speed, or may employ a copper slug time delay on attract or release. Supplied with any combination of basic switches up to 10 pole, double throw. The armature hinges on a pin type bearing, has an adjustable residual—fixed residual optional. Withstands vibration resistance in excess of 60 c. per second at an excursion of .065" except in highly sensitive applications. Often employed in plate circuits of phototubes with reasonable number of contact switches. Write for Bulletin 405.

GUARDIAN ELECTRIC
1626-L W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN WAR INDUSTRY

▲ Mention Item NED-6074 when writing ▲

Vinylite

SPRAY GUN SKIN PACKAGING

—new, vital wartime shipping protection

Fighter 'planes go abroad as freight, packaged to arrive in fighting trim. Wooden cases were used at first, but they meant precious time lost in dismantling and reassembling. Then a coating was devised, to be sprayed on the planes. So protected, they travelled on deck, safe from the effects of sea water and weather. The coating, however, tended to harden and flake off. Eighty hours were needed to seal openings and apply it; 250 hours to remove it, on delivery.

The need pointed to a coating that would provide full protection to 'planes in transit, yet could be stripped off readily upon arrival. The answer was soon found in a special VINYLITE resin solution. This solution contains a solvent harmless to the underlying paint. It also contains a plasticizer which provides a flexible film that *gives* to a ship's movements. It is sprayed on in about an hour and forms a continuous, paper-thin film—a tailor-made package that covers sharp edges efficiently, without cutting through. At journey's end, it is slit and stripped from the 'plane in a mere two hours!

'Round-the-world experience has shown that this plastic coating stands up under temperatures ranging from 30 degrees below zero to 180 degrees above. It has the required resistance to sunlight, sea water, and to the transmission of water vapor. All 'planes, even though they ride on exposed decks, arrive in perfect condition.

VINYLITE resin solutions have met an urgent need of wartime shipping. But of equal interest are the potential future uses of this sprayed-on "packaging" material. Engineers are already considering its possibilities for many other applications. Write Dept. 8 for further information.

Plastics Division
CARBIDE AND CARBON CHEMICALS CORPORATION
Unit of Union Carbide and Carbon Corporation
UCC
30 EAST 42ND STREET, NEW YORK 17, N.Y.

Plastics

▲ Mention Item NED-6075 when writing ▲

NEW Processes AND Materials

FILLING MATERIAL

Adaptable for filling boat cushions, head and arm pads for aircraft and for many insulation purposes, Typha is soft, downy, water-resistant and buoyant material which is processed from fluff of swamp cattail. In general, this material is adaptable for almost all uses previously requiring kapok. It is available only to manufacturers producing equipment directly connected with war effort. Made by **Burgess-Manning Co.**, 2815 W. Roscoe St., Chicago 18, Ill.

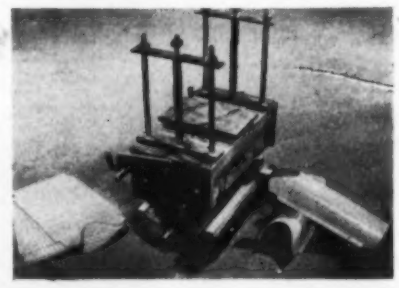
▲ Mention Item NED-6076 when writing ▲

WOOD PRESERVATIVE

Developed to control or eliminate dry rot, fungi and molds in wood, Triple-A Copper Naphthenate wood preserver is applied by brushing, spray or dipping. It will penetrate deeply and impregnate wood to seal it against destructive influences of molds or fungi. It provides permanent treatment at relatively low cost. It is non-poisonous to humans and will not bleed through light colored paints. Two coats of white paint are required to seal against bleed-through, but one coat of darker colors will usually cover satisfactorily. Preservative is green in color and all treated portions show plainly. Coverage is approximately 200 square feet per gallon. Made by **Quigley Co.**, 527 Fifth Ave., New York 17, N. Y.

▲ Mention Item NED-6077 when writing ▲

LAMINATED PLASTICS



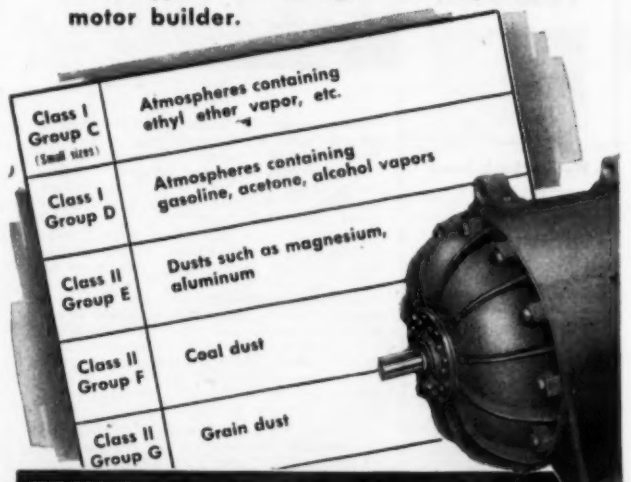
Recently developed process using laminated plastics material is expected to have widespread industrial applications. Process employs inexpensive dies made of wood or composition materials. Press forming operation is performed quickly

Illustration shows ammunition chutes which were made from cut blanks of laminated Formica which were heated to temperature just under blistering point and stamped quickly in press. Formed shape is retained upon cooling. Developed by **Formica Insulation Co.**, 4644 Spring Grove Ave., Cincinnati 32, Ohio.

▲ Mention Item NED-6078 when writing ▲

NEED EXPLOSION-PROOF MOTORS?

G.E. offers "hazardous-area" motors in more types and ratings than any other motor builder.



For application guidance write:
GENERAL ELECTRIC COMPANY, SCHENECTADY 5, N. Y.
GENERAL ELECTRIC

▲ Mention Item NED-6079 when writing ▲

Immediate Delivery FROM STOCK

GREAVES-SILENT BAKELITE GEARS

No waiting when you order Greaves Silent Bakelite Gears. • We have them in stock NOW! • Your order will go forward immediately. • You'll appreciate the silent operation and added smoothness provided by Greaves Silent Bakelite Gears. • You'll marvel at their great strength to carry big power loads . . . their remarkable ability to successfully operate completely submerged in water. • You'll welcome their low cost. • No metal reinforcements required. • Save Time . . . Money . . . Labor!

FOR CONCERNS CUTTING THEIR OWN GEARS, WE CAN MAKE IMMEDIATE DELIVERY ON BLANKS SAWED TO SPECIFIED DIAMETER AND FACE

We also make silent gears of rawhide and Fabriol.

Write for Circular.

Greaves MACHINE TOOL CO.
2809-7 Eastern Avenue
Cincinnati, Ohio

▲ Mention Item NED-6080 when writing ▲

ARMSTRONG

DROP FORGED "C" CLAMPS

Because they never give, then ARMSTRONG Heavy Duty "C" Clamps are safely used, day after day, to carry these gigantic steel forming dies where the slightest spread or spring or the least slippage of the screw would result in disaster.

Here is dependable quality that you too can rely on. Look for the Arm-and-Hammer Trade Mark. It guarantees a better clamp.

Write for Catalog C-39.

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
307 N. FRANCISCO AVE. CHICAGO 12, U. S. A.
Eastern Warehouse and Sales: 199 Lafayette St., New York

▲ Mention Item NED-6081 when writing ▲

. . . JUST TRY 1

MOCCASIN BUSHING on your most TROUBLESOME BEARING

The success of Moccasin Bushings' efficiency lies in their unique lubrication principle. Oil is drawn from a reservoir in the bearing housing and is distributed by capillary action in a continuous, unbroken film over the entire bearing surface. Drippage and seepage of oil is entirely eliminated, and under ordinary circumstances they require attention only two to four times a year—just try one on your most troublesome bearing. Guaranteed for satisfactory service.

Moccasin
BUSHING COMPANY
CHATTANOOGA, TENNESSEE

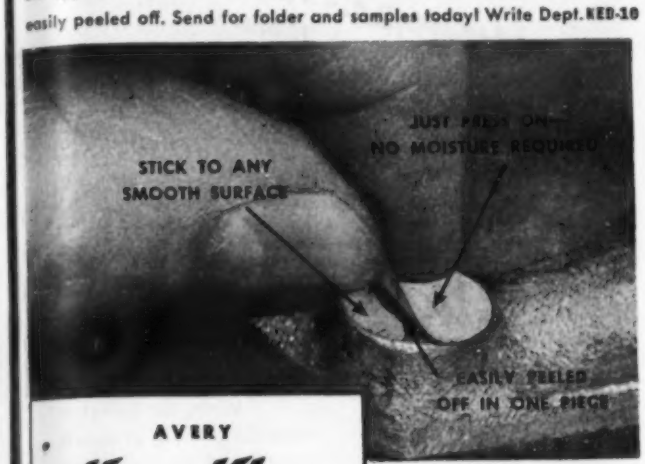
▲ Mention Item NED-6082 when writing ▲

KUM-KLEEN MASKING STICKERS

Pre-Cut!

TO ANY SIZE OR SHAPE!

You cut hours of masking time with these amazing new masking stickers that come to you die-cut the exact sizes and shapes you require. They are applied without moistening to any smooth surface, never pop off, easily peeled off. Send for folder and samples today! Write Dept. NED-10

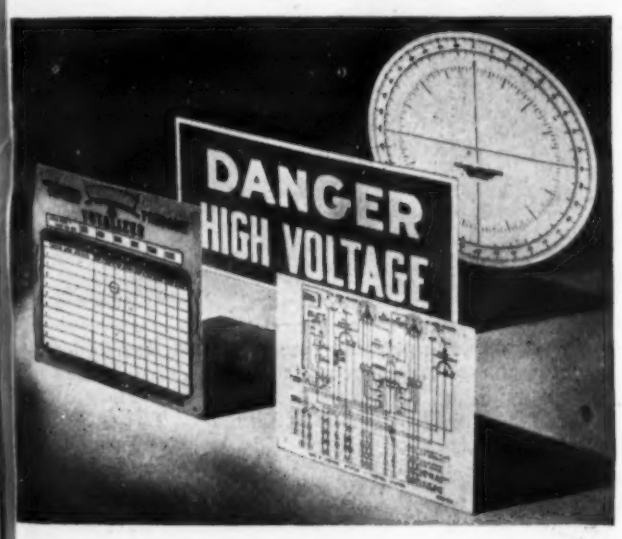


AVERY *Kum-Kleen* MASKING STICKERS

AVERY ADHESIVES: 451 East 3rd St., Los Angeles 13
New York, Boston, Detroit, Pittsburgh Chicago, Kansas City, Mo. In Canada: *Enterprise Sales, Toronto.*

▲ Mention Item NED-6083 when writing ▲

For the Economy of Permanence USE GRAPHIC LAMICOID



Bonded with any of several forms of Graphic Lamicoid—dials, signs, wiring diagrams, charts or other printed materials are easy to read, easy to clean and permanently protected against weather and wear. They are unaffected by oils, corrosive vapors, salt spray or extreme temperature changes.

Graphic Lamicoid is available in rigid, flexible, opaque or translucent form—in a number of colors. Samples and estimate on request direct from factory, or from our nearest branch office or fabricator. See addresses below.

MICA INSULATOR COMPANY
200 VARICK STREET, NEW YORK 14, N. Y.
Chicago: 600 West Van Buren St. Cleveland: 1276 West 3rd St.
Detroit: Book Building Cincinnati: 3403 Hazelwood Ave.
Boston: 285 Columbus Avenue

FABRICATORS OF LAMICOID
INSULATING FABRICATORS, INC.
12 East 12th Street, New York 3, N. Y. 22 Elkins Street, S. Boston 27, Mass.
LAMICOID FABRICATORS, INC., 3600 Potomac Avenue, Chicago 51, Illinois
THE KIRBY COMPANY, 13000 Athens Avenue, Cleveland 7, Ohio

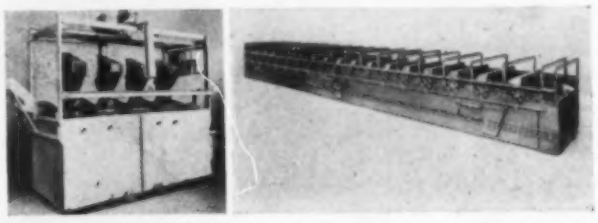
WEST COAST REPRESENTATIVES
TRIANGLE PACIFIC COMPANY
340 Azusa Street, Los Angeles, California
1045 Bryant Street, San Francisco, California
95 Connecticut Street, Seattle, Washington

▲ Mention Item NED-6084 when writing ▲

New Processes & Materials

METAL PROTECTIVE COATING

Dichromating of zinc coated steel and die cast parts through recently developed process makes possible application of this protective coating to all sizes and shapes of parts.



Machines shown operate on principle that absolute control of both time and temperature is vital in producing satisfactory coating. Equipment is fully automatic, eliminating irregularities of hand dip method previously employed. Bulk parts are carried through complete processing cycle by means of split timed dwell schedule. Parts are cleaned, rinsed, dipped, drained and dried continuously with dependable results and no scratching or scarring. Equipment is custom built to meet individual specifications. Made by **The Udylite Corp.**, 1651 E. Grand Blvd., Detroit 11, Mich.

▲ Mention Item NED-6085 when writing ▲

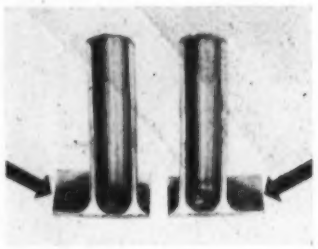
HEAVY DUTY FLOORING

Containing all desirable characteristics of hardeners, admixtures and processed components, Ferem Blue Temper flooring material produces surface which is resistant to wear, water and chemical disintegration. Material requires only addition of cement and water and is used in place of sand, gravel or stone in floor toppings for floors which are subjected to heavy traffic or where resistance to oil, water and dilute acid spillage is desired.

Material may be used for new floors, or for resurfacing or patching old floors. Made by **A. C. Horn Co.**, 43-36 Tenth St., Long Island City 1, N. Y.

▲ Mention Item NED-6086 when writing ▲

ALUMINUM SOLDER

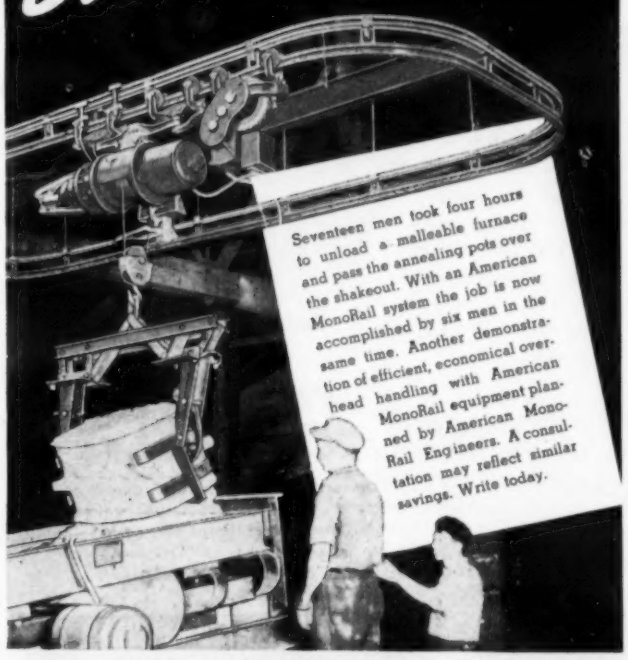


Used on aluminum in same manner as lead-tin solders would be used on brass or copper, EutecRod 199 low temperature welding rods facilitate solder sealing of lock seam, lapped, spot welded or riveted joints in sheet aluminum. Used with Autochemic Eutector flux 199, this material will flow readily on aluminum. It is suitable for applications where completed joint will not be heated above boiling point of water under working conditions.

In long laps it will make joints of moderate strength. Application temperature is 400 degrees Fahr. which eliminates distortion. It will bond to cast iron if the iron has been tinned with zinc base solder. Solder is applied with gas and air type torches or it may be preplaced on work which can be heated in oven or on hot plate. Rod is available in ⅛-inch size in standard packages of 200, 100, 50 or 25 pounds. Made by **Eutectic Welding Alloys Co.**, 40 Worth St., New York 13, N. Y.

▲ Mention Item NED-6087 when writing ▲

One 4-Hour Job *Saves* 44 MAN-HOURS



THE AMERICAN MONORAIL COMPANY
13116 ATHENS AVENUE CLEVELAND 7, OHIO

▲ Mention Item NED-6088 when writing ▲

Positively, More Accurately and to closer tolerances

MODEL 45B 100. The upper, sensitive roller contact actuates the Dial Indicator.

MODEL 45B-80. The upper, sensitive ball contact actuates the Dial Indicator. Both lower ball anvils float sidewise independently to compensate for any variation in lead.

No conventional type of gage, whether ring gage or roller-type snap gage, can tell you so **definitely** and so **quickly** the degree of accuracy of a pitch diameter as these two types of Dial Indicator Gages. Neither depend upon the uncertain sense of touch.

The roller type tells more than the conventional roller snap gage because the sensitive upper roller contact, reveals on the Indicator, just **how much** and **where** the pitch diameter may be wrong. The ball type simulates the three-wire method, but is faster. It is accurate to a tenth of a thousandth. Either type is incorporated in the adjustable Dial Indicator Gage shown below. For details write—

TWO FULL COLOR FILMS (With Sound)
No. 1 DIAL INDICATORS
No. 2 DIAL INDICATOR GAGES
20 minutes each. For instruction and training. For showing write

FEDERAL PRODUCTS CORPORATION
PROVIDENCE 4, RHODE ISLAND

Cables: CLEVELAND • DETROIT • DALLAS • HARTFORD • HOUSTON • INDIANAPOLIS • LOS ANGELES • MEMPHIS • MILWAUKEE • MINNEAPOLIS • MONTREAL • NEW YORK • PHILADELPHIA • PITTSBURGH • ROCHESTER • SAN FRANCISCO • ST. LOUIS • TORONTO • WINDSOR

FEDERAL
PRECISION MEASURING INSTRUMENTS

▲ Mention Item NED-6089 when writing ▲

JOHNSON BRONZE SLEEVE TYPE BEARINGS

Ready to use....

• Every Johnson GENERAL PURPOSE Bearing is completely machined to standard tolerances . . . ready for immediate installation. From our stock list of over 850 sizes you can buy exactly according to your needs. They are ideal for maintenance or new equipment. Write for our new catalogue and then try them on your next job. Satisfaction guaranteed.

JOHNSON BRONZE
SLEEVE BEARING HEADQUARTERS
580 S. MILL STREET NEW CASTLE, PA.

▲ Mention Item NED-6090 when writing ▲

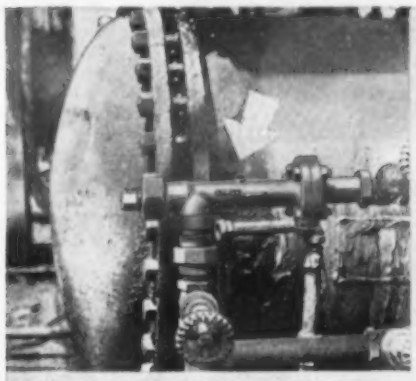
JOMAC Regular Industrial Gloves

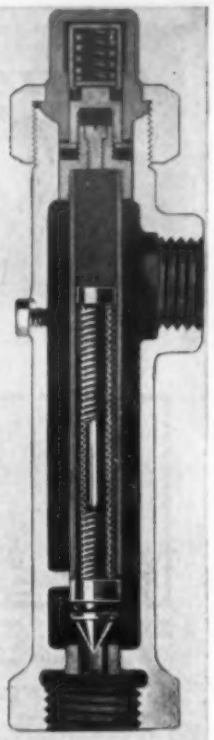
They wear longer—taking the roughest handling and giving as much as 7 times the service of ordinary work gloves. The hidden lock stitch in Jomac Fabric keeps the thick pile in place . . . and gives thousands of sturdy "cushions" which provide a semi-heat-resisting glove that protects the hands and makes possible the handling of reasonably hot metals. Jomac Gloves can be laundered, too. They are easy to keep clean . . . a safeguard against skin infections. (Jomac also makes the famous Heat-Resisting Gloves.)

TEST THEM!

JOMAC INDUSTRIAL GLOVES
C. WALKER JONES CO.
6135 N. Lambert St., East Germantown, Philadelphia 38, Pa.

▲ Mention Item NED-6091 when writing ▲





A steam trap and temperature control in one

It's the low cost Sarco liquid expansion trap, that is used by the hundreds in refineries, coal, chemical and other industries that have outdoor steam operations. It can't freeze.

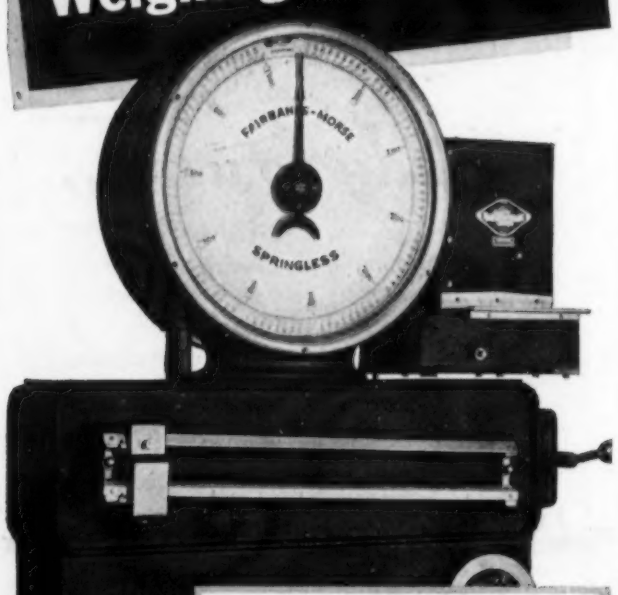
Also in various forms, can be used as a steam injector, or a tank temperature control. Ask for Catalog No. 550.

No. 87

SARCO SAVES STEAM — SARCO COMPANY, INC. 475 Fifth Avenue, New York 17, N. Y. SARCO CANADA LTD. 85 Richmond St. W. TORONTO, ONT.

▲ Mention Item NED-6094 when writing ▲

WANTED: Bigger and Tougher Weighing Problems!



Got any "handling bottlenecks" in your plant? Do you lose time transferring or counting small parts . . . keeping shipping records . . . mixing raw materials?

Fairbanks-Morse Scales will solve your problems. Our engineers have rendered service in countless cases where just such problems were retarding production. What has been done can be done again . . . for you. We believe we can eliminate your bottleneck.

Here are just a few of the long list of jobs Fairbanks-Morse Scales can do in your plant:

- Control ingredients of paint and other products
- Record flow of liquids
- Count large or small parts
- Weigh and record moving materials—cans to carloads
- Automatically control aggregates
- Guard secret formulas in compounding
- Control batching of various materials
- Print shipping records—incoming and outgoing

For further information about how Fairbank-Morse Scales can be adapted to your problem write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

BUY WAR BONDS

FAIRBANKS-MORSE Scales

DIESEL ENGINES, PUMPS, MOTORS, GENERATORS, WATER SYSTEMS, SCALES, STOKERS, FARM EQUIPMENT, RAILROAD EQUIPMENT

▲ Mention Item NED-6095 when writing ▲

New Processes & Materials

PATCHING PLASTER

Damaged walls and woodwork are easily repaired or resurfaced with Plastic Patch. It adheres to old plaster without need for undercutting of edges. It will not shrink or crack and adheres firmly to plaster, wallboard, brick, metal and painted surfaces.

Material is mixed to smooth, paste consistency with water and is applied with flexible broad knife, putty knife or trowel. Material may be used satisfactorily for filling cracks, nail holes, leveling torn off wallpaper areas and scaled paint and filling shallow wall depressions or textured paint surfaces. Patch can be made water resistant by mixing compound with varnish or enamel. Made by **Sherwin-Williams Co.**, Dept. E, 101 Prospect Ave., N. W., Cleveland, Ohio.

▲ Mention Item NED-6096 when writing ▲

SYNTHETIC INSULATION

Applicable for power, lighting and communication cable, Nubun synthetic rubber insulation is flexible, impermeable to water, permits laminated construction and affords perfect centering of conductor. These features serve to produce insulated wire of maximum conductivity with minimum diameter. Following vulcanization, insulation is homogeneous and has high electrical characteristics including dielectric strength and resistance. Under electrical tests voltage breakdown after submersion in water at room temperature is 650 volts per mil. Tensile strength after 96-hour aging in oxygen bomb is 2000 pounds per square inch. Made by **U. S. Rubber Co.**, 1207 Rockefeller Center, New York, N. Y.

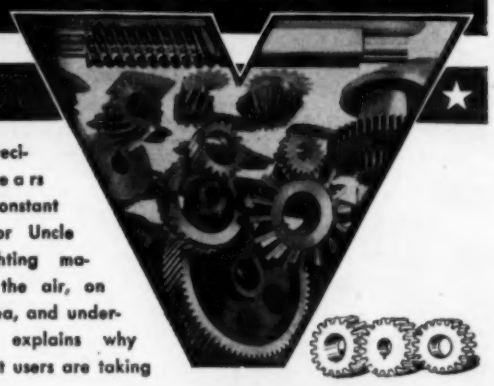
▲ Mention Item NED-6097 when writingg ▲

NON-SLIP FLOOR WAX

Speedy application of Grip Wax which provides glossy non-slip finish to all types of floors is obtained by spraying directly on surface. Secure footing is assured even on cement floors. Material is free flowing liquid which sets in a few minutes to non-tacky, lustrous finish without rubbing. There is no solvent action on asphaltic tile, rubber or linoleum. Floor pores and joints are sealed against water penetration. Flexibility resists constant traffic blows. Made by **Turco Products, Inc.**, Dept. 25, 6135 S. Central Ave., Los Angeles 1, Calif.

▲ Mention Item NED-6098 when writing ▲

America's No. 1 Gear Jobs COME FIRST!



Abart Precision-cut Gears are in constant demand for Uncle Sam's fighting machines—in the air, on land, on sea, and undersea. This explains why many Abart users are taking their turn.

Abart GEARS

Let us know your needs nevertheless, for prompt quotation and earliest possible delivery. Abart means *better gears*—spur, bevel, helical, internal, small or large. All materials. *To Specifications only. No stocks. Send B/P for estimate.* ALSO SPEED REDUCERS: Over 75 types and sizes. ASK FOR CATALOG.

Abart GEAR AND MACHINE CO. MANUFACTURERS OF Speed Reducers & Gears 4822 WEST 16th ST., CHICAGO 50, ILLINOIS

▲ Mention Item NED-6099 when writing ▲

A COMPLETE LINE

VICKERS OIL-HYDRAULIC POWER GENERATION AND CONTROL DEVICES

Pumps — Constant Delivery, Variable Delivery, Motor Driven

Valves — Solenoid Operated, Pressure Operated, Manually Operated

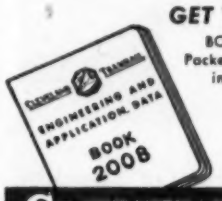
Fluid-Motors — Gear Type, Piston Type

Write for Bulletins describing these products.

VICKERS Incorporated
1456 Oakman Blvd. • DETROIT, MICHIGAN

▲ Mention Item NED-6100 when writing ▲

Simple smooth-operating cranes like this are aiding workmen, speeding production and cutting costs on thousands of jobs. There's a Cleveland Tramrail crane for every purpose.



GET THIS BOOK! BOOK No. 2008 Packed with valuable information...

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1143 East 283rd St. Wickliffe, Ohio

CLEVELAND TRAMRAIL

▲ Mention Item NED-6101 when writing ▲

HEIN-WERNER HYDRAULIC JACKS

Great for

✓ lifting heavy loads
✓ moving machinery
✓ pressing gears
✓ other applications

(Model 30.11A)

Take a look around your factory and you will find many uses for Hein-Werner Hydraulic Jacks... These super-powerful, easy-operating, absolutely dependable hydraulic jacks save time and labor when it comes to lifting heavy loads, pressing gears, pinions, bushings, etc. . . . Complete H-W line includes models of 3, 5, 8, 12, 20, 30 and 50 tons capacity . . . For details, consult your nearest industrial supply distributor, or write us.

HEIN-WERNER MOTOR PARTS CORP.
Waukesha, Wisconsin

▲ Mention Item NED-6102 when writing ▲

Increase Machine Life with

IDEAL "3 in 1" ELECTRIC CLEANERS

Do as thousands of others are doing—make hard-to-replace machines last longer and operate better through regular use of IDEAL Electric Cleaners. *Super-powered.* Blow dry air, evaporate moisture, prevent corrosion. NOW AVAILABLE ON REGULAR PRIORITY.

BLOW
VACUUM
SPRAY

Write for Detailed Literature

IDEAL Sycamore

IDEAL COMMUTATOR DRESSER CO.
1032 Park Ave. Sycamore, Ill.
Sales Offices in all Principal Cities
In Canada: Irving Smith, Ltd., Montreal, Quebec

▲ Mention Item NED-6103 when writing ▲

Bofors Guns BUILT WITH UNITCASTINGS

Fast-firing performance puts a terrific strain on every part in the Bofors gun. Some of these parts—such as the gear casings shown above—are UNITCASTINGS! Whether it's steel castings for the mechanized fighting units of today . . . or for the improved machines and products of tomorrow . . . Unitcast *pours 'em right* for automatically controlled Quality and Uniformity!

Unitcast Corporation, Toledo, Ohio.

UNITCAST CORPORATION ALLOY AND CARBON ELECTRIC STEEL CASTINGS

▲ Mention Item NED-6104 when writing ▲

BUSHINGS

XLO Precision XLO Precision XL

Big or small . . . long or short . . . head or headless press fit . . . fixed or slip renewable—chances are Ex-Cell-O's Bulletin 11882 will list the drill jig bushings you need. Send for your copy.

XLO
EX-CELL-O for PRECISION

EX-CELL-O CORPORATION
DETROIT 6 MICHIGAN

▲ Mention Item NED-6105 when writing ▲

New Processes & Materials

SHAPE-CAST TOOL STEEL

Tool steels are available cast-to-shape for such commercial applications as dies, forming tools, glass molds, gages, hobs, gears, cams and many other items. Principal advantages include savings of time, labor, material and machining costs. Standard castings are being made of air hardening, oil hardening, flame hardening, stainless and heat resistant analyses of tool steel. Many other analyses of specialty steels are available, even to special specifications. Heaviest sections are cored out and reinforcing ribs are used for added strength. Patterns may be furnished by customer or made from blueprints. Service offered by **Jessop Steel Co.**, 555 Green St., Washington, Pa.

▲ Mention Item NED-6106 when writing ▲

FILLING COMPOUND

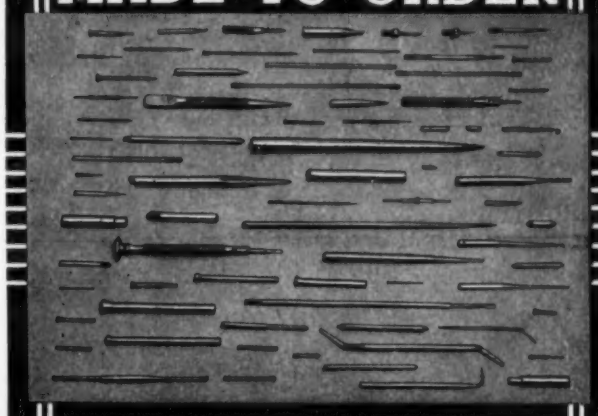
Filling compound No. S-182 has been developed for lifting magnet cases, potting small transformers and for general filling work. It is firm with considerable resiliency and withstands extremely high or low temperatures. Internal cohesion minimizes danger of disintegration and severe stresses.

Compound is supplied in two parts. S-182E low viscosity material and S-182A viscous liquid are mixed immediately prior to use as they react slowly at room temperatures. However, mixture retains sufficient liquidity for pouring for period of 4 to 5 hours. Though heavy, compound penetrates into small interstices. It sets in 1 hour and dries thoroughly overnight at 60 to 70 degrees Cent. When baked at 105 to 110 degrees Cent. it reaches maximum hardness in 1 to 6 hours, depending upon mass involved.

It has high dielectric strength, low coefficient of expansion and is water resistant and oilproof. It will withstand temperatures up to 200 degrees Cent. without resoftening and does not become brittle at temperatures as low as −60 degrees Cent. Made by **Sterling Varnish Co.**, 163 Ohio River Blvd., Haysville, Pa.

▲ Mention Item NED-6107 when writing ▲

MADE TO ORDER



Unusually accurate metal parts including operations such as heading, rotary swaging, roll threading, fluting, knurling, pressing, milling, turning, grinding, forming, etc.

Single and double tenon studs turned on specially designed machines, held to close diameter tolerances, with no cut-off burrs.

Uniform heat treatment assured with the very latest equipment.

The Torrington Company
SPECIALTY DEP'T.
Torrington, Conn., U.S.A.

▲ Mention Item NED-6108 when writing ▲

MUSCLE OR MOTOR POWER?

YOUR Truck-Man will out-do any push and pull, muscle propelled truck. Designed for moving skidded inter-plant loads. Gasoline powered. Hydraulic lift. Easily handled. Used in widely diversified industries—large and small—from Maine to California. *Send for bulletin.*

truck-man

ONE TON CAPACITY $675.00 F.O.B. Jackson, Michigan

a product of YARD-MAN, INC. 1414 WEST GANSON JACKSON · MICHIGAN

▲ Mention Item NED-6109 when writing ▲

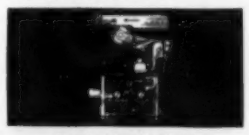
Only MICRO SWITCH Fills All These Requirements

Thumb Size • Weighs Less Than One Ounce • Millions of Operations • Operating Force as Little as One Ounce • Operating Movement as Little as .0003" • Good Electrical Capacity • 1200 VA-AC

Some Examples of MICRO SWITCH Applications

CABINET DOOR SWITCH
For safety alarm, or interlock on H.T. cabinets, transmitter or switch compartments. Panel mount switch normally open.

DRAFT INDICATOR
Can be operated by a cam on the draft shaft, three switches make contact at "open," "half" and "closed" positions.



CAM ACTUATION
Metal Clad Micro Switch with Roller Arm Actuator operated by sliding cam. Characteristics may vary with operating conditions.

OPERATION BY SOLENOID
A solenoid may be used to operate a spring plunger Micro Switch to control other circuits.

Production engineers are rapidly finding more and more uses for the Micro Switch because this small, snap-acting precision switch more fully than any other fills the needs for a switch to control substantial amounts of power and to operate in small space.

The basic Micro Switch in the Bakelite case is built with various contact separations and in several degrees of sensitivity, some switches requiring as little as 2/1000 ounce-inches of energy for operation. Basic switches are combined with a wide range of easy-to-use housings that provide conduit connections, mechanical protection, and several types of actuators. These housings also provide devices to absorb actuating motion beyond the small movement required to operate the Micro Switch.

There are over 2700 variations of housings, actuators and electrical characteristics built around the basic Micro Switch.

Micro Switch is Underwriters' listed and rated at 1200 V.A. at 125 to 460 volts a. c. Capacity on d. c. loads depends on load characteristics.

Micro Switch Handbook-Catalog No. 60 will give you complete details as to electrical characteristics, construction, applications and dimensions. Send for it today.

Let's All Back the Attack—Buy EXTRA War Bonds

©1944

MICRO MS SWITCH
TRADE MARK
A DIVISION OF FIRST INDUSTRIAL CORPORATION
FREEPORT, ILL., U.S.A., Sales Offices in New York, Chicago, Cleveland, Los Angeles, Boston, Dallas, Portland, (Ore.)

▲ Mention Item NED-6110 when writing ▲

KOCH OVENS ARE VERSATILE

THESE KOCH OVENS

are ready for quick post-war conversion

To meet a war-time need for the most efficient way of preheating bakelite prior to forming it into distributor caps, KOCH engineers installed *panels of drawers* in these standard KOCH cabinet ovens, in place of the usual doors.

Present needs are met perfectly . . . and if shelf-style ovens should ever be needed, these ovens may be converted by merely replacing drawer panels with regular doors. Shelf supports are already in place.

KOCH engineers are trained to find the simplest, quickest, most practical solution to *any* oven problem . . . let them help with yours!

PHONE, WIRE OR WRITE

GEORGE KOCH SONS, INC. *Industrial Equipment* 2124 PENNA. ST., EVANSVILLE 4, IND.

▲ Mention Item NED-6111 when writing ▲

. . . In step with your needs

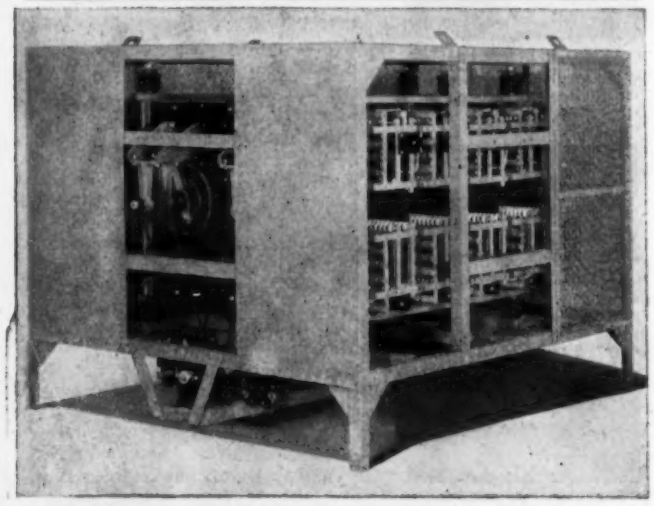
You need not go out of your way to buy Socket Head Cap Screws, Socket Set Screws, Stripper Bolts, Pipe Plugs, Square Head Dog Point Set Screws, Keys, or other Standard Screw Products manufactured by The Chicago Screw Company. These fine products are sold only thru authorized distributors—and there is one near you, ready to take care of your requirements . . . You'll find our distributors carrying adequate stocks, and accustomed to giving prompt attention to all orders placed with them.

ARMY E NAVY

These Fine Products are sold only thru Authorized Distributors

THE CHICAGO SCREW CO.
ESTABLISHED 1872
1026 SO. HOMAN AVENUE CHICAGO 24, ILL.

▲ Mention Item NED-6112 when writing ▲



ASSEMBLED RHEOSTATS

This Ward Leonard rheostat, built for production testing of grid-controlled rectifier tubes, consists of five face plates, each composed of two rheostats. Each rheostat will drop from 0 to 375 volts at any current from 15 to 0.15 amperes. Series connected they drop 3750 volts. Parallel connected they handle currents up to 150 amperes.

Send for rheostat bulletins of interest to you.

ARMY E NAVY

WARD LEONARD
RELAYS • RESISTORS • RHEOSTATS
Electric control devices since 1892.

WARD LEONARD ELECTRIC CO., 51 South St., Mt. Vernon, N. Y.

▲ Mention Item NED-6113 when writing ▲

New Processes & Materials

RUBBER GLOVE SELECTOR

Selection of proper type of rubber or synthetic rubber glove for specific use is facilitated with this circular or dial type selector. Imprinted on sturdy cardboard, device consists of dial listing 32 common industrial conditions, such as snag resistance, gas diffusion, fats and oils, alcohols, acids, abrasion, plating solutions, etc. By setting dial for condition, first and second choice of industrial gloves are indicated in window of selector. Available free from **Surety Rubber Co.**, Dept. IGS, Carrollton, O.

▲ Mention Item NED-6114 when writing ▲

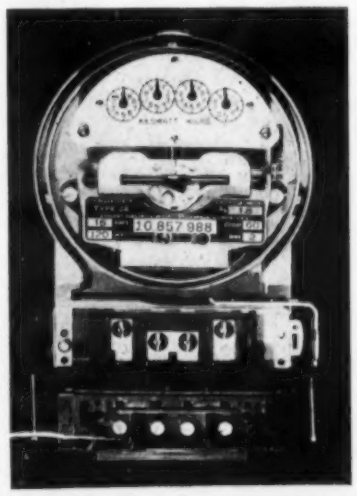
SILVER PLATING

Silver deposits of considerable thickness can be plated electrolytically onto aluminum or aluminum alloys by means of Preplate process, either directly or following copper, nickel, zinc or cadmium deposition. Aluminum is thoroughly cleaned as prescribed, passivated, immersed in special solution for few seconds and then electroplated in usual manner using standard equipment. Torsion, heat, corrosion resistance and weathering tests show that adherence is good.

High rate of conductivity offers many applications of silver plating onto light weight aluminums in electrical, transportation, communications and heat transfer fields. Process developed by Technical Processes Div., **Colonial Alloys Co.**, 2154 E. Somerset St., Philadelphia 34, Pa.

▲ Mention Item NED-6115 when writing ▲

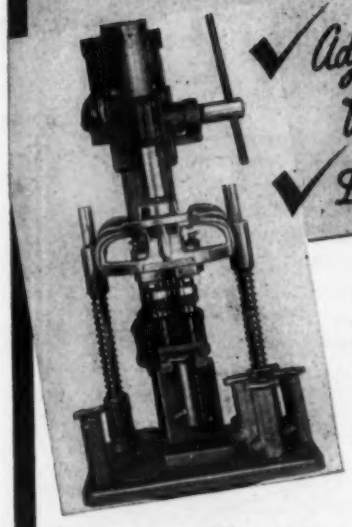
PLASTIC INSULATION



Recently adopted as standard for insulating terminals of watthour meters by Sangamo Electric Co., Melmac is mineral filled melamine-formaldehyde plastic molding material. Product will not carbonize from arc-overs and it also provides atmosphere at elevated temperatures which possesses arc-quenching properties. High dielectric properties and arc-tracking resistance of material suggest its use in many other electrical applications. It is adaptable for use in circuit breakers and switch parts or in electrical equipment involving making and breaking of contact under conditions of humidity, dust, dirt and extremes of temperature. Made by Plastics Div., **American Cyanamid Co.**, 32-A Rockefeller Plaza, New York 20, N. Y.

▲ Mention Item NED-6116 when writing ▲

TWO SPINDLE
Adjustable
DRILL HEADS
Drill Two Holes At Once



✓ *Adjustable Centers from 1/2" to 6"*

✓ *Drill Capacity 0" to 5/8"*

Sleeve and overarm types . . . in several sizes. Will double output of any single spindle drill press.

Quickly adjusted to desired drill centers from ½" to 6".

Send for bulletin.

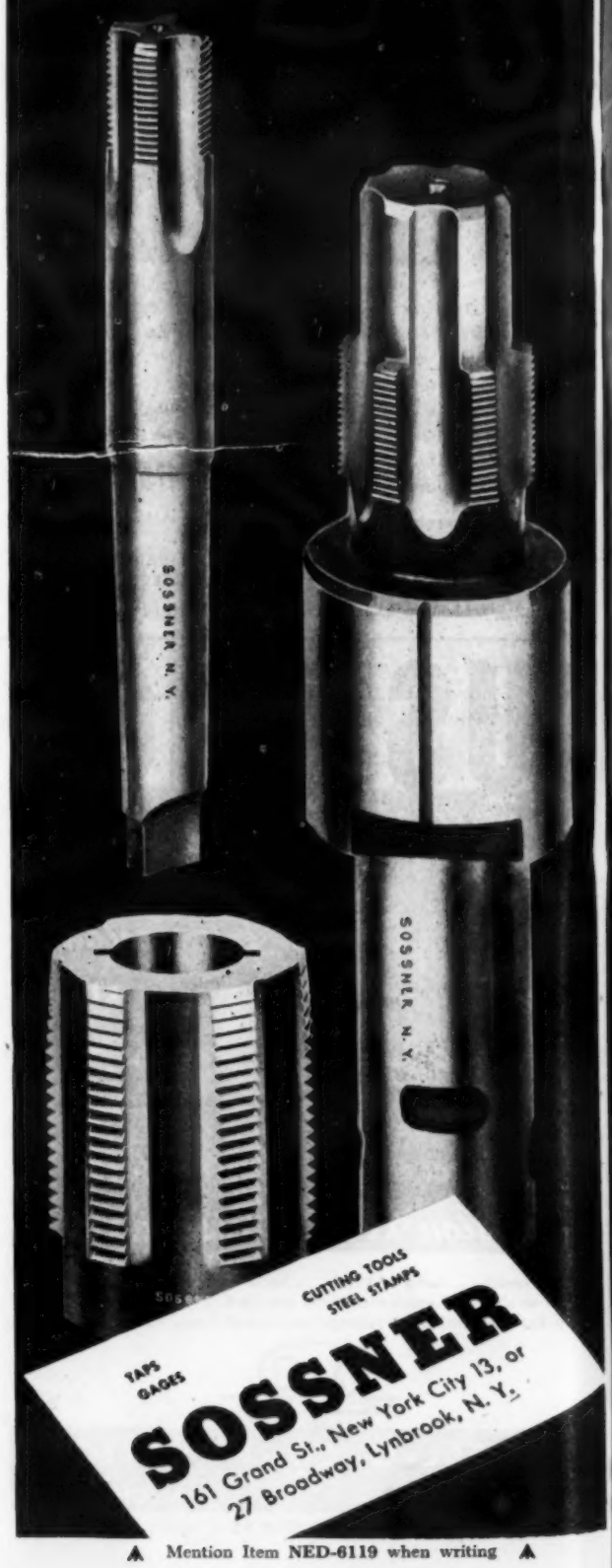
LINDERME MACHINE & TOOL CO., INC.
12263 COYLE AVE., DETROIT 27, MICH.

▲ Mention Item NED-6117 when writing ▲

▲ Mention Item NED-6118 when writing ▲

33 YEARS OF PRECISION WORKMANSHIP, RELIABILITY, PERSONALIZED SERVICE

TAPS AND GAGES IN AMERICAN NATIONAL, BRITISH AND SPECIAL THREAD FORMS.



▲ Mention Item NED-6119 when writing ▲

GIVING FORM
TO CHEMISTRY'S COMPOUNDS—
ACADIA

• While chemistry compounds the ingredients which make synthetic rubber, Acadia Synthetic Products processes that rubber to give it form; molding, extruding or cutting it to close tolerances to fill your requirements.

To this task Acadia brings wide experience in synthetics, manufacturing ability, and service offered through the cooperation of their engineers in helping determine the synthetic best suited to your needs.

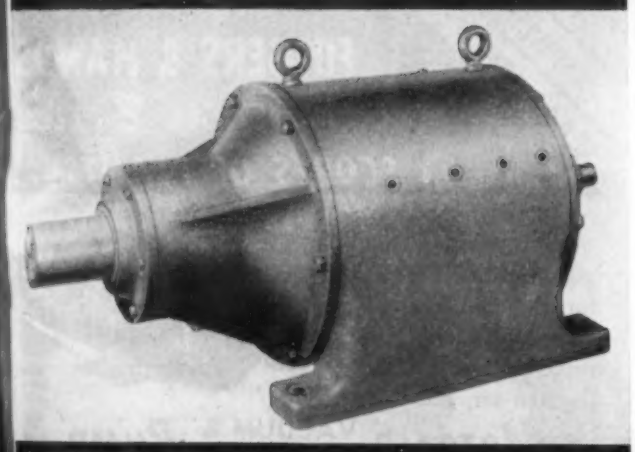
Write us today.

ACADIA Synthetic PRODUCTS
Processors of Synthetic Rubber and Plastics
Sheets • Extrusions
Molded Parts

DIVISION WESTERN FELT WORKS
Largest Independent Manufacturers and Cutters of Wool Felt
4035-4117 OGDEN AVENUE, CHICAGO 23, ILLINOIS
Branch Offices in All Principal Cities

▲ Mention Item NED-6120 when writing ▲

PLANETARY GEAR SPEED REDUCERS



HORIZONTAL DRIVE, AVAILABLE IN 35 SIZES, WITH A RATIO RANGE OF 10 TO 1200:1, FROM ¾ TO 75 HORSEPOWER

FOR LARGE SPEED REDUCTIONS AND GREATEST EFFICIENCY

SINCE 1903... D.O.James planetary Gear Reducers have been used on many industrial applications where large reductions were needed. The superior gear arrangement of this type of reducer obtains highest ratios and greatest efficiency. They are most compact and occupy very little floor space. The equal balance and similar revolving direction of the rolling contact of the gear teeth produces the maximum reduction with the minimum number of gears.

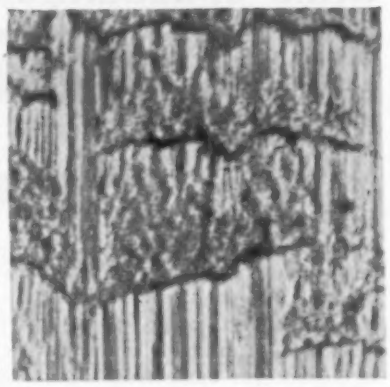
TODAY... Modern manufacturing methods and facilities, under the supervision of an experienced operating personnel, assure the utmost efficiency and durability to D.O.James Gears and Gear Speed Reducers.

D.O.James
ESTABLISHED 1888 MANUFACTURING CO.
1140 WEST MONROE STREET • CHICAGO 7, ILL.

▲ Mention Item NED-6121 when writing ▲

New Processes & Materials

SURFACE INSPECTION METHOD



Consisting of small piece of film mounted on cardboard frame which fits any standard projector where it can be enlarged 100 times or more and shows contours in all three dimensions, Faxfilm provides simple method for surface inspection and comparison. By use of solvent, one surface of plastic film is softened enough to permit making of contact replica of any surface. Film is permanent and may be filed for future reference.

Method requires less than 1 minute to perform and cost is as low as 6 cents per replica in small quantities. Illustration shows machine finished steel bar surface enlarged to 100 diameters. Kits are available at $15, containing sufficient materials to make 250 Faxfilm replicas. Developed by R. D. McDill, 5109 Mayfield Rd., Cleveland 21, O.

▲ Mention Item NED-6122 when writing ▲

HEAT RESISTANT PAINT

Used on surfaces subjected to high heat, Triple-A high heat resisting paint is claimed to assure maximum protection as well as decorative effect. Properly applied, it will adhere to light steel under rapid heating and cooling with maximum temperatures of 1400 degrees Fahr. On alloy steel or brick it will withstand 2500 degrees Fahr. or more. Finish is not inflammable and is non-irritating. It does not give off fumes or odors while being applied, upon drying or when subjected to heat or flame. Paint is applied as supplied in thin, well-brushed coats on clean, dry surfaces. Heat curing extends resistance to moisture and weather. On surfaces subjected to heat in use, no heat curing is required. Made by Quigley Co., 527 Fifth Ave., New York 17, N. Y.

▲ Mention tem NED-6123 when writing ▲

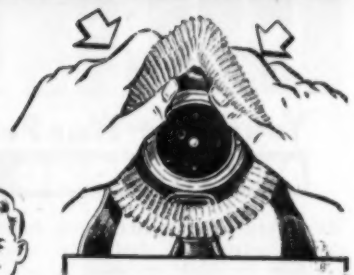
FIBER GUN BUTT PLATE

Long wearing and distinctive in appearance, bone hard vulcanized fiber is now being formed into gun butt plates for Smith & Wesson 38-caliber special military and police type guns. This material is light in weight and resistant to breakage. Illustrated butt plate is machined into stag effect and has been treated to resist moisture. Fiber made by Taylor Fibre Co. Plate made by Penn Fibre & Specialty Co., 2036 E. Westmoreland St., Philadelphia 34, Pa.

▲ Mention Item NED-6124 when writing ▲

AIRTIGHT *Face Fit* ASSURED IN PULMOSAN RESPIRATORS

Body Construction Permits Adjustment to Any Facial Contour



Only a respirator that assures a snug, airtight face fit can provide dependable protection. Since the facial contours of men and women workers range from square, oval, round, fat, thin—how can you be sure of respiratory safety for all? By supplying Pulmosan Respirators with the exclusive Face Fit body construction—and patented rubber face cushion, available in three sizes.

With the respirator held as shown, the Pulmosan Face Fit metal body may be bent inward or outward as required, to snugly fit the wearer's facial contours . . . and then it holds its shape thereafter. Simple, effective, permanent.

Models for every breathing hazard. Get literature

Pulmosan EVERYTHING FOR INDUSTRIAL SAFETY
PULMOSAN SAFETY EQUIPMENT CORPORATION • 176 JOHNSON ST., BROOKLYN 1, N. Y.

▲ Mention Item NED-6125 when writing ▲

SPEEDY AIR VISE

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

• Speedy Air Vise helps workers get out more and better work—in less time! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce. Operates from air line or individual compressor, exerting a grip of 15 times air line pressure. Jaw opens up to 3 inches, easily fitted to hold castings, parts, jigs, etc. Speeds up every drilling, light milling, tapping and assembly operation. Compact, sturdy, trouble-free, low in cost! ••••• *Speedy Air Vise, complete with Foot Control Valve, Air Hose and Fittings, only* $24

Prompt Delivery from Your Supplier or Write Direct.

W. R. BROWN CORPORATION
5716 Armitage Avenue • Chicago 39, Ill.

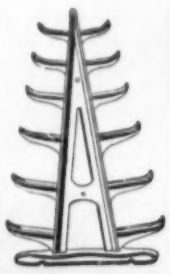
AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

▲ Mention Item NED-6126 when writing ▲

EVERY ONE A "CHAMPION"
CHAMPION
Power HACK-SAW Stand

May also be used as a jack. Maximum adjustment, six inches. Swivel head. Base, diameter, 14 in.; Height, extended, 30 in.

STEEL RACKS



A rack, 5 ft. high with 6 different length arms, that's built to hold all the steel you can place on it. Cuts cost in stock handling.

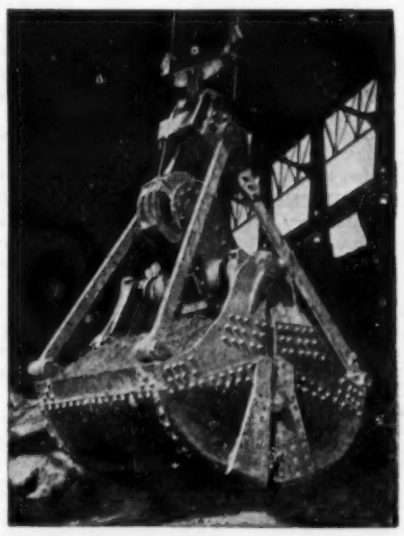
The WESTERN Tool and Manufacturing Co.
SPRINGFIELD, OHIO

▲ Mention Item NED-6127 when writing ▲

BLAW-KNOX BUCKETS
take the least of your crane time—handle more pay load

Send for the catalog which describes the bucket you need—

- No. 1853—Blaw-Knox Buckets for Cement, Chemical and Fertilizer Plants.
- No. 1696—Blaw-Knox Buckets for Single Drum Hoists for use on Railroads, Mills, Foundries, Etc.
- No. 1745—Blaw-Knox Buckets for "Burtoning" handling Nitrates, Grain, Potash, Etc.
- No. 1757—Blaw-Knox 2 Line Lever Arm Buckets for Rehandling, Barge Cleanup, General Purpose, Hard Digging, Dredging.
- No. 1865—Blaw-Knox 4 Rope Buckets for Coal, Ore and Cleanup.
- No. 1752—Blaw-Knox Buckets for Incinerator Service.



Installation of a Blaw-Knox Bucket at a "trouble-spot" takes that worry off your mind—definitely—for each bucket is tailor-made for its particular job.

For digging and rehandling the many bulk materials throughout industry there's a Blaw-Knox Bucket.

You can select a bucket from the many interesting catalogs listed above.

BLAW-KNOX DIVISION of Blaw-Knox Co.
2068 FARMERS BANK BUILDING, PITTSBURGH, PA.
NEW YORK • CHICAGO • PHILADELPHIA • BIRMINGHAM • WASHINGTON

▲ Mention Item NED-6128 when writing ▲

New SURETY SELECTOR for INDUSTRIAL RUBBER GLOVES

A complete compilation of acids, chemicals, solvents, and other destructive elements, with appropriate type gloves to withstand conditions on every job.

A Time and Money Saver

FOR ALL INDUSTRIAL RUBBER GLOVE USERS

The first accurate guide to the correct type of rubber or synthetic glove for every requirement. Write on your company letterhead for free selector today.

Largest and Original Producers of Synthetic Gloves
THE Surety RUBBER COMPANY
CARROLLTON, OHIO

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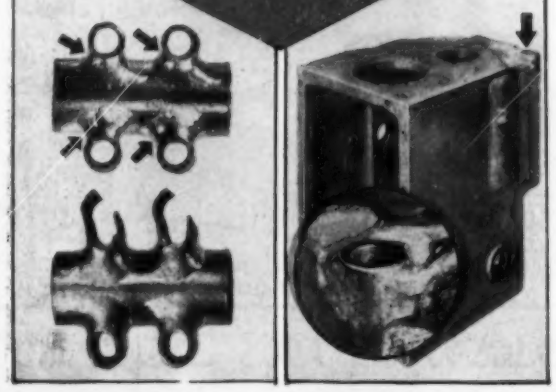
Make 6-Ways Better Welds with EUTECTIC

(Pronounced U-TEC-TIC) Reg. U. S. Pat. Off.

Low Temperature WELDING RODS



Chrome Moly steel clamp test proves high strength and shows fine color match of all joints welded with EutecRod 16.

Cast Iron Gear case boss built up with EutecRod 14 demonstrates easy machinability and smoothness of weld.

EUTECTIC welds are: *smoother, stronger, better color matched, more machinable, faster to make and require less heat;* avoiding distortion, stresses and overheating.

No other welding or brazing process affords welders such a combination of advantages at such low bonding temperatures (as low as 340°) and little heat consumption.

EUTECTIC *Low Temperature* Welding, the most revolutionary welding development of modern times, enables you to weld joints at temperatures *below the fusion points of base metals,*—eliminating the many hazards of high temperature fusion welding.

All metals can be joined by the EUTECTIC process. No special skill is required . . . no extensive training needed. All standard methods of heating are employed: Gas—Arc—Furnace and others, in combination with the new EUTECTIC Welding Rods and Fluxes.

Castolin Eutectic

EUTECTIC WELDING ALLOYS COMPANY
Originators of Eutectic *Low Temperature* Welding
40 Worth Street, New York 13, New York Room_____
Please send me full information about EUTECTIC *Low Temperature* Welding and its many great advantages.

Name_____

Company_____ Position_____

Address_____

See EUTECTIC demonstrated at the Metal Show, Cleveland — Booth D-306
National Chemical Exposition, Chicago — Booth 125
National Power Show, New York — Booth 312

▲ Mention Item NED-6130 when writing ▲

New Processes & Materials

HARD CELLULAR RUBBER

Ebony-like in structure, Cell-Tite cellular synthetic rubber material which has been used extensively for propeller fairings is also adaptable to wide range of industrial applications. Fairings attached to Hamilton Standard propellers as shown effect considerable decrease in engine temperatures and improve performance of planes. Fairings weigh only 4 to 6 pounds.

Material is available in various weights ranging from 8 to 20 pounds per cubic foot, depending upon its ultimate use. It has more buoyancy and lower water absorption than cork. It has excellent thermal, electrical and sound insulation qualities. Aging properties are good because of its imperviousness to water and weather, combined with resistance to chemical attack. Material can be sawed, planed, drilled and worked in same manner as wood. Made by **The Sponge Rubber Products Co.**, 131 Housatonic Ave., Derby, Conn.

▲ Mention Item NED-6131 when writing ▲

ELECTRICAL INSULATION

More resistant to flame and arcing than resins ordinarily employed in standard grades of laminated material, GMG-17-P-5 glass base plastic is available in sheets, tubes and rods for electrical applications which require high flame and fire resistance, high arc resistance and high mechanical strength. It is made by combining fine weave, continuous filament fiberglass fabric with thermosetting melamine resin. It is not toxic upon burning. This laminate is available in thicknesses ranging from 1/32 to 2 inches, in sheets 36 inches wide and 36, 42, 84 and 96 inches long. Thicknesses under 1/16 inch may be sheared, but heavier material should be cut with abrasive wheel. Carboloy tools are recommended for turning, drilling and other machining operations. Made by **Formica Insulation Co.**, 4644 Spring Grove Ave., Cincinnati 32, O.

▲ Mention Item NED-6132 when writing ▲

SYNTHETIC RUBBER

Extreme low temperature flexibility without addition of plasticizers plus high resistance to solvents, ozone and sunlight are features of Thiokol ST which is adaptable for many purposes heretofore unserved by either natural rubber or synthetics. It will not take on permanent deformation under pressure or stress. Unpleasant odor common to most polysulphides is reduced to negligible factor. Low volume swell in hydro-carbon fuels make this material useful in aviation and automotive industries for sealants, cements and acid-resistant coatings. Developed by **Thiokol Corp.**, Dept. SM, Trenton, N. J.

▲ Mention Item NED-6133 when writing ▲

IDENTIFY

Your Post-War Products with MEYERCORD DECALS!

Meyercord Decal nameplates, lubricating guides, wiring diagrams, instructions, dial faces, serial and patent numbers, etc., can now be made resistant to acid, abrasion, moisture, heat, cold, petroleum and fungus growth.

Meyercord Decals are washable, durable and easily applied with water or cement to any commercial surface at production line speed. They save time, cost, materials and weight.

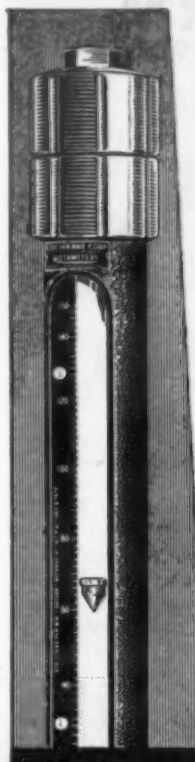
Designs may be reproduced in any size or number of colors, and can be applied to flat, convex or concave surfaces...even *rubber* and *crinkled* finish. Investigate the amazing variety of uses for Meyercord Decals in every branch of your business. Address inquiries to Department 13-10.

FREE DESIGNING SERVICE
Manufacturers and designers are invited to avail themselves of Meyercord's free designing and technical consultation service on postwar identification.

the MEYERCORD Co.
CHICAGO 44, ILLINOIS

BUY WAR BONDS

▲ Mention Item NED-6134 when writing ▲



A FOOL-PROOF RATE-OF-FLOW METER

The introduction of a new line of Rotameters by the Cochrane Corporation is important news for industrial firms concerned with flow measurement. For the Series-100 Rotameter is not just another Rotameter. It is a better and more trustworthy instrument, combining greater accuracy, ruggedness, simplicity and effectiveness with moderate cost.

SOME EXCLUSIVE FEATURES ARE—

1. SPRING-LOADED CONSTANT-TENSION GUIDE ROD.
2. SPRING FLOAT STOPS.
3. HIGH PRESSURE STUFFING BOXES.
4. POSITIVE EXTERNAL ADJUSTMENT OF STUFFING BOXES.
5. WHITE-BACKED METERING TUBE.
6. REMOVABLE CALIBRATION SCALE.

Write for a copy of Publication R-100

COCHRANE CORPORATION
3.43 N. 17th St., Philadelphia 32, Pa.

COCHRANE-ROTAMETERS INC
ROTAMETERS

▲ Mention Item NED-6135 when writing ▲

CONVEYING • HOLDING • LIFTING • FILLING • EVACUATING • SEPARATING • GUIDING • CLEANING

MECHANICAL FINGERS & HANDS DO THESE JOBS *Better* IN SCORES OF PLANTS...

For handling box and binders board, paper, light metal forms, combining and slitting fabrics, removing dust and impure air, etc.

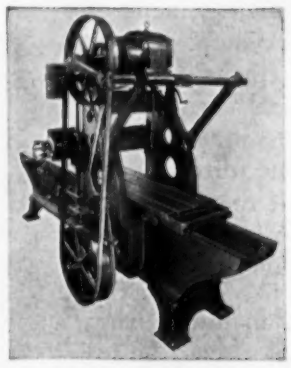
MOTOAIR VACUUM & PRESSURE PUMP

Operates many control devices at less cost than Electric Eye | NO GEARS— NO DRIVES

NEW JERSEY MACHINE CORPORATION
15th St. and Willow Ave. • HOBOKEN, N. J.

▲ Mention Item NED-6136 when writing ▲

MASTERDRIVES for PLANERS



ELIMINATES LINESHAFTING

Now you can have added flexibility in plant layout, because Masterdrive eliminates lineshafting and permits placing planers wherever you wish.

The drive is supported by four supports. Each of these require the drilling and tapping of four holes. Once supports and horizontal bar are in place, motor base and outboard bearing support can be moved laterally to line up with pulleys. Your present ceiling lineshaft pulleys are used on the motor counter shaft.

A single complete installation with Masterdrive—one responsibility. Write today for details of planer or other Masterdrive applications.

THE MASTER ELECTRIC COMPANY
INDUSTRIAL EQUIPMENT DIV. — DAYTON, O.

▲ Mention Item NED-6137 when writing ▲

AMPLICALL MULTIPLIES MANPOWER

AMPLICALL Paging and Two-Way Communications Systems effectively bridge the gaps when there is much work to do and too few hands to do it. *AMPLICALL's* multiple uses are making it possible for thousands of plants to effect immense savings of time and steps . . . *get much more done daily with the same manpower!* High quality construction, perfect tonal sound and flexible design are the factors behind the outstanding success of *AMPLICALL*. Your inquiry is invited.

BACK THE ATTACK — Rauland — BUY MORE WAR BONDS

RADIO · RADAR · SOUND · COMMUNICATIONS · TELEVISION

THE RAULAND CORPORATION • CHICAGO 41, ILL.

▲ Mention Item NED-6138 when writing ▲

VERSATILE HydrOILic PRESSES CUT COST OF JOB CHANGE-OVER

Aid Plants in Changing Quickly to Post-War Work

oday's press needs—because of oming peace-time production—put double value on the wide-range djustability of power, speed and ontrol this HydrOILic Press offers.

he pressure gauge shows the tonage exerted at every stage of operation. The operator can quickly t pressure limits for maximum efficiency on each operation. And the ress will deliver any pressure *regardless* of the stroke adjustment.

he ram also can be quickly adsted. It can be made to descend d *return* only as far as required r the work at hand. This saves ower, speeds production.

desired, the operator can control ressure and stroke *manually*, as he es, without pre-set adjustment.

to 150-ton capacities. Manual, edal, or electric control. Write for etails on DLAC2 HydrOILic Presses

he DENISON Engineering Co. 151 Dublin Rd. Columbus 16, Ohio

DENISON EQUIPMENT for APPLIED HydrOILics

▲ Mention Item NED-6139 when writing ▲

Check your "Locker room" Problems this NEW, Space-saving way.

he NEW Peterson locker prevents rowding, saves valuable production ace, and actually *doubles* coat room apacity — it accommodates the othing, lunches and miscellaneous ear of 12 employees in just 5 quare feet of space.

hese easy to-move units come in onvenient 5-foot lengths to fit into therwise waste space, and when laced near the point of work they revent interrupting, inter plant affic and locker room jams at rush ours. Also double units (back-to-ack) provide ample locker space r 24 people in every 5 running et.

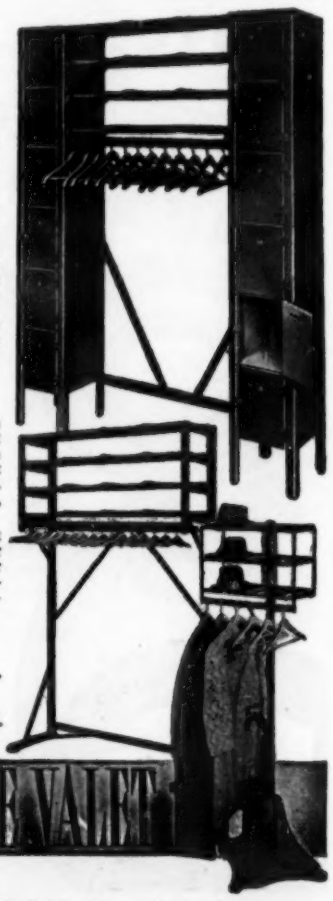
Employees, too, like Peterson Locker Room Equipment

ach worker has a spaced "out in e air" coat hanger for keeping ttling dry, sanitary and "in ress"; an individual ventilated hat elf, and an individual one cu. ft. ck box for lunches, micrometers, struments or personal effects.

eterson Locker Room Equipment designed for factory, shop or ice—a complete line of locker its, wardrobe racks and nonpping (6 or 12-person) cosmers. Available Now.

WRITE FOR CATALOG

OGEL-PETERSON CO.
"The Checkroom People"
3 N. Wolcott Ave., Chicago 22, Ill.



The PETERSON VALET

▲ Mention Item NED-6140 when writing ▲

New Processes & Materials

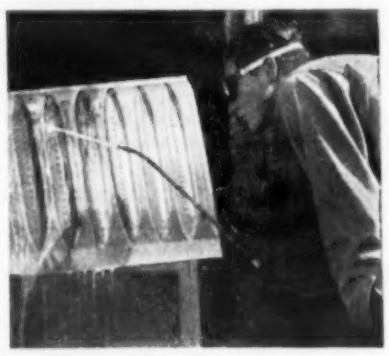
DRYING-OIL TYPE RESIN

Available without restrictions as to end use, Duraplex AL-20 low-cost, drying-type resin is adapted to air-drying finishes and is designed for use in protective paints for freight cars, structural steel, aluminum paints, read lead primers, shingle stain reinforcing and industrial maintenance finishes. It contains only 50 per cent reportable oil, thus extending oil quotas.

Resembling bodied linseed oil in speed of dry and ultimate hardness and phthalic alkyds in its pigment wetting and binding properties, this resin produces coatings that are flexible, have good adhesion and wearing qualities. Films are not heat reactive and remain essentially unchanged after short bakes at as high as 400 degrees Fahr. Resin will body further when heated in kettle and can be converted to a gel by heating for several hours at 450 to 475 degrees Fahr. It is a good general grinding medium for air-drying paints and enamels. Made by **Resinous Products & Chemical Co.**, 222-1 W. Washington Sq., Philadelphia, Pa.

▲ Mention Item NED-6141 when writing ▲

PAINT STRIPPER



Loosening paint for speedy removal with water, L-780 water soluble paint stripper is non-corrosive on metals, making it safe for use on any aircraft part or assembly. It is also safe to use on wood with no tendency to cause warping and is non-inflammable. Because of water soluble characteristic of stripper, brushes and cleaning equipment can be cleaned for re-use quickly by vigorous churning in bucket of water.

Material is applied with brush or spray and is left on surface for 5 to 20 minutes. Loosened paint is scrubbed with water saturated brush to form slurry. Slurry is then removed by hosing with water, steam or air and water gun. Stripper, being free rinsing, leaves water break free surface. Made by **Turco Products, Inc.**, Dept. 25, 6135 S. Central Ave., Los Angeles 1, Calif.

▲ Mention Item NED-6142 when writing ▲

CERAMIC WIRE INSULATION

Consisting of thin ceramic coating deposited on copper, nickel and other types of wire, Ceroc 200 insulation withstands continuous operating temperatures of 200 degrees Cent. as compared with present limit of 105 degrees Cent. for class A insulations such as enamels, varnishes and organic materials. Its use permits substantial increase in volt-ampere rating in motor, chokes, transformers and other electrical equipment.

Because coating is extremely thin, minimum of space is required. Insulation has high thermal conductivity. Material withstands 16 per cent elongation under bending. Samples are available to quantity users. Made by **Sprague Electric Co.**, North Adams, Mass.

▲ Mention Item NED-6143 when writing ▲

Is There A Screw Loose Somewhere ?

"USE UNBRAKO"
SELF LOCKING HOLLOW SET SCREWS WITH KNURLED POINTS

Once tightened in the customary manner, "UNBRAKO" Knurled-Point Set Screws stay put, yet are as easily removed as ordinary set screws and can be used over and over again.

A loose Set Screw can put any mechanism on the blink to such an extent that the use of a truly self-locking type is vitally essential.

Take, therefore, a few minutes to dictate a letter requesting details. It may save you many man-hours of valuable time later.

UNBRAKO

Knurling of Socket Screws Originated With "UNBRAKO" Years Ago.

OVER 40 YEARS IN BUSINESS

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 594
— BRANCHES —
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

▲ Mention Item NED-6144 when writing ▲

KEUFFEL & ESSER CO · Est. 1867
Chicago · NEW YORK · HOBOKEN, N. J. · Montreal
St. Louis · San Francisco · Los Angeles · Detroit

▲ Mention Item NED-6145 when writing ▲

*SOAPOTAGE is West's name for the use of hand cleansers that contain harsh chemicals or harsh abrasives which tend to harm the skin and make it more liable to infection. The millions of men and women whose skin must necessarily come in contact with chemicals and other irritants in the course of their work are learning that certain precautions are necessary.

All authorities agree on the importance of personal cleanliness and some authorities go so far as to state that 90% of all occupational skin diseases could be prevented by proper personal cleansing methods. West SULPHO HAND CLEANER, therefore, should be of paramount interest to industrial physicians, safety engineers and plant managers.

SULPHO HAND CLEANER

. . . for Severe Skin-Drying Occupations

In some occupations, chemicals are encountered which tend to remove normal fat of healthy skin and make it more susceptible to dermatitis. For those who have naturally dry skin and for those who must in the course of their work dip their hands in solvents, degreasing compounds, etc., West offers Sulpho Hand Cleaner.

West Sulpho Hand Cleaner is made of sulphonated vegetable oil combined with a wetting agent plus a small amount of a chemical cleaner. Due to the nature of the product, it has an almost neutral pH. It is specially designed not to defat the skin.

• *Send for your free copy of this booklet.*

WEST DISINFECTING Company
42-16 WEST ST., LONG ISLAND CITY 1, N. Y. Dept. DE

▲ Mention Item NED-6146 when writing ▲

SpeedWay

MORE DRILL for the Money

The last word in ½" capacity drills with every advanced feature. Powerful specially designed Universal Motor pours power thru triple reduction hardened steel gears. Forced air cooling prevents overheating. Housing is sturdy, light weight die casting. Self-aligning porous bronze bearings soak up oil like a sponge, release it slowly as bearing temperatures change. New type "in line" rear grip makes it natural to drill straight holes. One handle removable for close quarter drilling. Light weight (only 10¼ lbs.) means easy handling, yet it is so powerful that it will drill a ½" hole in iron with 500 lbs. weight on the bit. Jacobs key operated chuck. This is not a heavy duty production line tool, but it will give exceptional service to the garage man, maintenance man, contractor or installer.

SPEEDWAY MANUFACTURING COMPANY
1868 S. 52nd Avenue Cicero 50, Illinois

▲ Mention Item NED-6149 when writing ▲

Check these Increases In Tool Life Obtained by

Cold Treating

in a Deepfreeze Industrial Chilling Machine

Operation	Tool	Tool Life Before Cold Treatment (Number of pieces machined per grind)	Tool Life After Deepfreeze Cold Treatment	Increase
Milling foot pads on chrome moly steel motor mound	4½" end mill	40	84	110%
Drilling 338 holes in aluminum airplane fin	No. 29 drill No. 21 drill ⅛" drill No. 41 drill	112 54 82 144	280 108 164 288	150% 100% 100% 100%
Drilling 16 holes in chrome moly steel motor mound	No. 45 drill	8	50	525%
Drilling 12 holes in chrome moly steel side plates of motor mound	Combination 29/64" drill and ⅜" reamer	60	140	133%
Drilling 2 stainless steel parts	F drill	200	300	50%
Drilling holes in buck board for gun turret	No. 30 drill	10	32	220%
Average Increase in Tool Life on 6 Typical Jobs in This Plant...				165%

Manufacturer Averages 165% Increase on Six Typical Jobs...

Sub-zero treatment in a Deepfreeze −120° F. Industrial Chilling Machine produced an average increase of 165% in the life of tools used on six typical jobs in one plant. Equal or longer life was obtained from subsequent grinding in most cases. The following procedure is used:

1—Heat part to approximately 300° F.
2—Allow to return to room temperature (approx. 100° F.).
3—Chill for 2 to 6 hours at minus 120° F. in Deepfreeze machine ⅔ full of methylene chloride convection fluid.
4—Allow to return to room temperature.
Repeat cycle six times.

Equally profitable results are possible in every factory, jobbing shop and heat treating plant. Deepfreeze industrial chilling units are also effective for shrink-fit assembly, stabilizing of gauge blocks and instrument testing.

Get FREE Additional Facts—Write for *"Cold Treating Practice"*—a 40-page illustrated booklet containing latest information on how and where to use sub-zero temperatures. Ask for Bulletin No. 1-4.

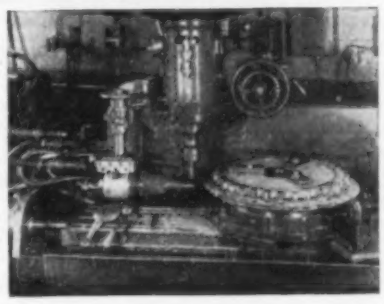
Only Motor Products can make a "Deepfreeze"
Trade-mark DEEPFREEZE Registered United States Patent Office

Deepfreeze 2316 Davis Street, North Chicago, Illinois
Division of Motor Products Corp. Detroit, Michigan

▲ Mention Item NED-6150 when writing ▲

NEW Applications

SPROCKET MACHINING

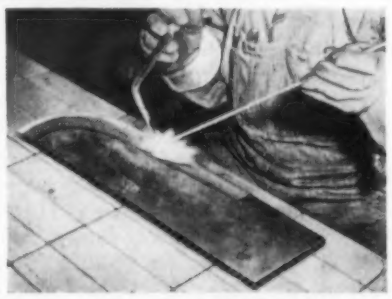


Machined in less than half of time formerly required by conventional methods, sprocket teeth are formed with this Turchan hydraulic Follower machine. Use of milling machine equipped with Follower attachment also eliminates inspection time since inspection is performed by operator while machine is in operation. Attachment also handles drilling operation with hydraulic feed being designed to drill 14 holes in 3 to 4 minutes using multiple spindle drills.

Only 18 minutes were required for roughing and 13 minutes for finishing, including set-up time, by this method as compared with 75 minutes per sprocket when using gear cutters. This work was performed on 33-tooth sprocket of 1-inch SAE 4140 steel having outside diameter of 21⅞ inches and inside diameter of 14¼ inches. Teeth are finished to tolerance of 0.002 inch and rejects are claimed to be practically eliminated. Developed by **Turchan Follower Machine Co.**, 8259 Livernois, Detroit 4, Mich.

▲ Mention Item NED-6151 when writing ▲

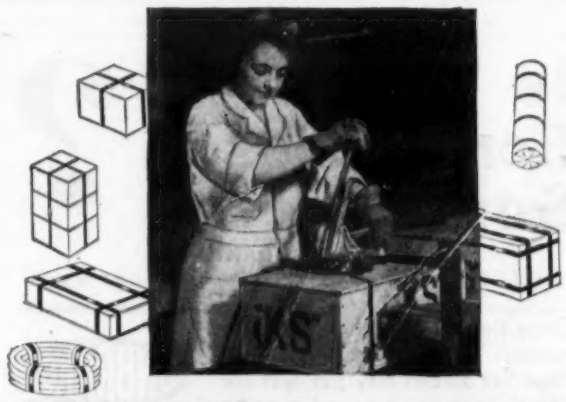
HARD FACING KNIVES



Efficient cutting life of sugar cane mill knives can be lengthened by this method of hard facing. Knife which is protected by what amounts to inserted core of hard, wear resistant metal can be made of steel boiler plate by any reliable welding or machine shop. When completed, knife is self-sharpening, sharpening itself evenly as both sides wear. Shutdowns for repair are thus prevented.

To make knives by this procedure, blank blade is cut from steel plate and outer circular edge is rabbeted to provide recess with depth slightly more than half of knife thickness. Rabbeting is done on milling machine. Then Haynes Stellite cobalt chromium tungsten hard facing alloy is applied to recessed area. This layer is covered with thin layer of steel by oxy-acetylene welding and steel is then built up by metallic arc process to fill remainder of recess. After edge is sharpened by grinding 15-degree bevels on both sides, knife surface is ground flat and is ready for use. Alloy can be extended to greater depth within blade at points of greater wear, thereby compensating for nonuniform wear of blade along its length. Process developed by **Haynes Stellite Co., Kokomo, Ind.**

▲ Mention Item NED-6152 when writing ▲



REINFORCED BY ACME Steelstrap

...and "BO'JND TO GET THERE"

The scientific reinforcement of shipping packs—from single containers to carloads of freight—is the business of Doc Steelstrap who is represented by Acme engineers.

Today, on every fighting front, there is evidence of their skill—on cases, cartons and crates, on bales and on skid loads—on material and supplies from Army and Navy depots, from arsenals and from war industry. Strap has a full-time war assignment, part of a job that Uncle Sam calls "pack it right to reach the fight."

It's the same job that we have always called making shipments "Bound to Get There." When their war work is finished, Acme engineers will be ready to discuss the possibilities of steelstrap reinforcements for your post-war business . . . wherever it may travel.

ACME STEEL CO. CHICAGO
ACME STEEL COMPANY
2822 ARCHER AVENUE, CHICAGO 8, ILLINOIS

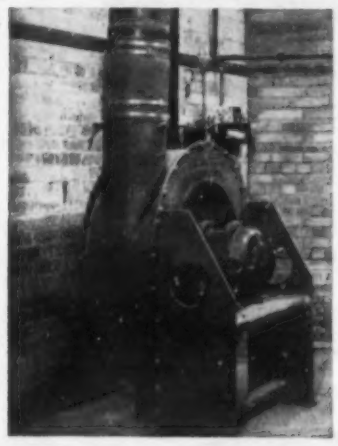
▲ Mention Item NED-6153 when writing ▲

A High-Quality Low-Cost . . . BLOWER

Type "G" MOTOR BLOWER

FOR GENERAL INDUSTRIAL USE

★ A complete line of blowers for relatively low discharge pressure and for handling large volumes of air or gas. Steam turbine or electric-motor drive is usually employed.



Motor blowers: Type G, sizes range from 2 to 30 hp for pressures of ½ to 2-¼ lbs and volumes from 100 to 4500 cfm. Type FS, sizes range from 5 to 250 hp for pressures of ¾ to 3 lbs and volumes from 650 to 16,600 cfm.

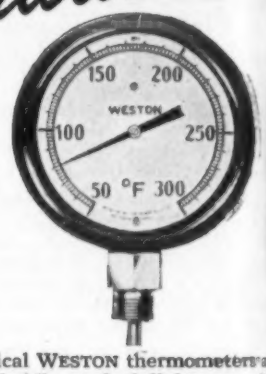
Turbo Blowers: Built in sizes up to 14,500 hp with capacities to 125,000 cfm. Maximum discharge pressure is 100 lbs.

Ingersoll-Rand
11 BROADWAY NEW YORK 4 N. Y.

▲ Mention Item NED-6154 when writing ▲

MOST Readable

WHERE READABILITY COUNTS MOST



Wherever temperatures are critical WESTON thermometers are preferred because of their large, boldly marked dial-type scales. Even though mounted high above eye level, or on equipment in poorly illuminated areas, the scale is visible, *and readable* without inconvenience. Thus readings are made in less time . . . and with *far greater accuracy* . . . and without the temptation to carelessness that low visibility invites.

The wide-spread adoption of WESTON thermometers throughout the synthetic rubber, oil refining, and other process industries has been due to this readability, *plus* the records for *long-time dependability* which these simple all-metal thermometers have established. Literature giving complete specifications on all models gladly furnished on request. Weston Electrical Instrument Corp., 663 Frelinghuysen Ave., Newark 5, N. J.

Weston *All Metal* TEMPERATURE GAUGES

▲ Mention Item NED-6155 when writing ▲

This

PORTABLE ELECTRIC-DRIVEN BILGE and REFUELING PUMP

may be your ANSWER

• This ROMEC Portable (64 lb.) unit handles liquids at the rate of 150 gal. per hr. or more from its refueling pump and 840 gph. from its bilge pump. Both pumps operated by a G. E. motor. Equipped with a 10 ft. suction hose and a 30 ft. discharge hose—(1¼" inside diam.). Originally designed for refueling aircraft and removing bilge water from hull and pontoons of sea planes. Its easy portability, its precision engineering and high capacity will prove valuable in many industrial applications. Write us about your requirements for quick help today.

ROMEC PUMP CO
110 ABBEY ROAD
ELYRIA, OHIO, U.S.A.

▲ Mention Item NED-6156 when writing ▲

THE ACROMARKER FOR FASTER MORE EFFICIENT AND PERMANENT MARKING, NUMBERING AND STAMPING OF NAME PLATES, OR FILLING IN CODE LETTERS OR KEY SYMBOLS ON METAL, PLASTICS, FIBRE OR MISCELLANEOUS MATERIALS.

LITERATURE ON REQUEST

ACROMARK
MARKING AND STAMPING SPECIALISTS
7-11 MORRELL STREET, ELIZABETH, NEW JERSEY

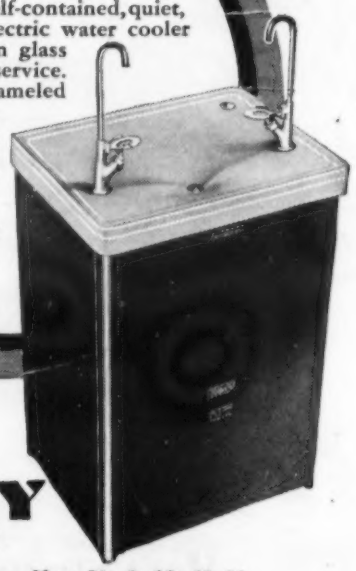
▲ Mention Item NED-6157 when writing ▲

CORDLEY

Electric
WATER COOLERS

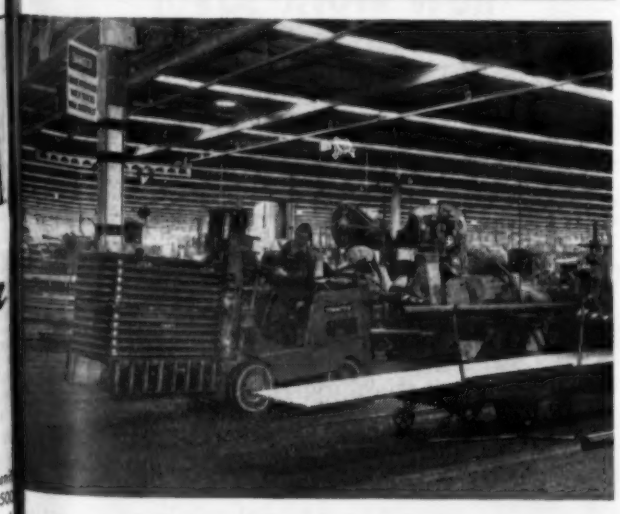
This handsome self-contained, quiet, high-efficiency electric water cooler has two push-down glass fillers to speed up service. White porcelain enameled top, gun metal finish cabinet is sanitary and ratproof. Floor space only 20½ x 26 inches.

Write for Data



Remember the name
CORDLEY AND HAYES
457 Fourth Ave., New York 16, N. Y.
Specialists on Drinking Water Equipment Since 1909

▲ Mention Item NED-6158 when writing ▲



TO keep plants going full blast, without production delays and profit losses, materials must reach and leave machines on schedule. Materials handling operations are best accomplished by versatile equipment, capable of performing great numbers of different loading, moving, stacking and storing assignments. For the way to profitable materials handling, write Towmotor Corporation, 1219 E. 152nd Street, Cleveland 10, Ohio, and

ASK FOR TOWMOTOR DATA FILE

TOWMOTOR

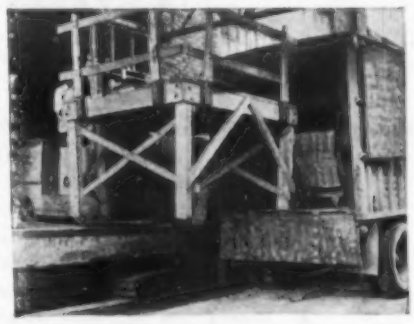
DATA FILE TOWMOTOR

THE 24-HOUR ONE-MAN-GANG

▲ Mention Item NED-6159 when writing ▲

New Applications—Continued

TRUCK UNLOADING AID



Unloading of motor trucks in narrow, congested street was performed readily by R. J. Reynolds Tobacco Co. plant through use of portable platform. When incoming loads were backed up at right angles to receiving room door, they blocked traffic. Use of platform made it possible for delivery truck to park lengthwise in street for unloading.

Rugged, portable loading platform was built of heavy timber. It can be stored in building, out of way when not in use. Fork type power truck is used to place or remove platform. Load on truck is handled on skids with hand trucks into receiving room. Skids are handled by power fork truck from receiving room to destination. Suggestion offered by **The Elwell-Parker Electric Co.**, 4502 St. Clair Ave., Cleveland 14, O.

▲ Mention Item **NED-6160** when writing ▲

ZINC PLATE STRIPPER

Rapid removal of zinc plating is effected with Enthone zinc stripper. Thickness of 0.001 inch is stripped in 30 seconds, leaving metal clean and bright. Solution is alkaline, thereby minimizing corrosion of base metal. It will not attack steel. This solution is also effective in removing coatings which have been treated with various chromate processes. It is supplied in salt form which is added to water in concentration range of 2 to 3 pounds per gallon. Stripping bath is used at temperatures from 200 to 215 degrees Fahr. Plain steel tanks and heating coils may be used. Made by **The Enthone Co.**, 478 Elm St., New Haven, Conn.

▲ Mention Item **NED-6161** when writing ▲

SHELL TRIMMING OPERATION

Only 7 to 8 seconds cutting time is required to trim 1½-inch end from 105-millimeter shell using wet type J Radiac abrasive cut-off machine. This end is portion remaining after

shell has been turned to shape in lathe. After piece has been cut off as closely to shell as possible, facing operation follows. Vise is arranged so that it clamps shell and supports it on both ends. To further expedite handling, foot treadle opens and closes jaws of vise. Two views show cutting and clamping arrangement. Cut-off machine made by **A. P. de Sanno & Son, Inc.**, 202 Bridge St., Phoenixville, Pa.

▲ Mention Item **NED-6162** when writing ▲

METAL STAMPINGS IN SMALL LOTS

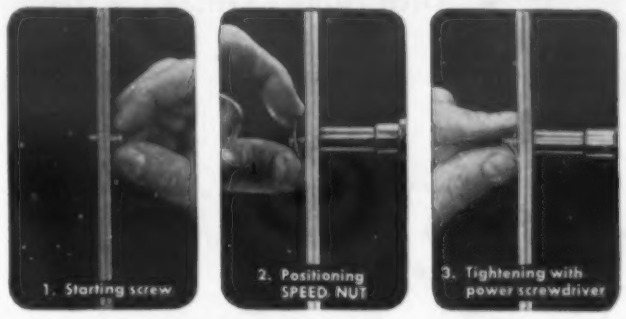
There is no other method of producing metal stampings in small lots that can equal the process originated by Dayton Rogers Mfg. Co. No matter how intricate the design or how small the quantity requirements, we can show you a substantial saving.

Write for illustrated booklet #176-13.

DAYTON ROGERS MANUFACTURING CO.
2837 12th Ave. S., Minneapolis 7, Minn.

▲ Mention Item NED-6163 when writing ▲

only 3 operations



instead of 5 . . .

The SPEED NUT method requires only 3 hand operations as shown in photos above. And only 2 parts are needed instead of 3. Why go through 5 hand operations using threaded nut and lock washer when only 3 are necessary? Over 2,000 shapes and sizes. Write for literature.

WITH THE

TINNERMAN PRODUCTS, INC.
2044 Fulton Road, Cleveland 13, Ohio
*Speed Nuts** [PATENTED]
*Trademark Reg. U. S. Patent Office

▲ Mention Item NED-6164 when writing ▲

KESTER Cored Solders take the *Kinks* out of Production Lines

• If you are plagued by an unsolved solder problem, consult Kester engineers. These experienced men know solder the way a surgeon knows anatomy. They can help you speed up production, improve your product and minimize service difficulties.

• Numerous types of Kester flux-filled solders are available for industrial use. Each is scientifically correct. Kester Rosin-Core Solder, used for electrical work, has a patented plastic rosin flux that will not disintegrate, cause corrosion or injure insulating material.

• In the wide range of Kester Cored Solders there is one exactly suited to every production program. Our engineers will be glad to study your problem and make recommendations. Write to them at any time—there is no obligation.

KESTER SOLDER COMPANY
4249 Wrightwood Ave., Chicago 39, Illinois
Eastern Plant: Newark, N. J. Canadian Plant: Brantford, Ont.

KESTER *Cored Solders*
STANDARD FOR INDUSTRY

▲ Mention Item NED-6165 when writing ▲

this Seal of Merit

SYMBOLIZES THE SOLUTION TO YOUR SEALING PROBLEMS

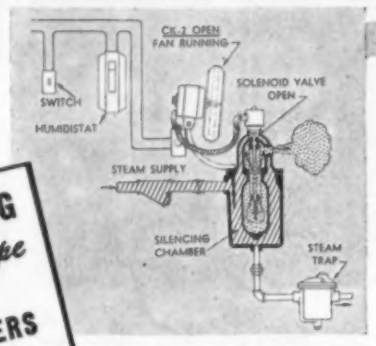
Seal rings developed by Pure Carbon are meeting the most exacting demands for efficiency. In applications where low friction, non-abrasive and long-lasting seal rings are a necessity, our carbon seal rings are demonstrating their superiority to the complete satisfaction of increasingly more manufacturers. Consult the Pure Carbon engineer in or near your city. He'll gladly co-operate with you in working out the answer to your sealing needs.

Send For New Book Defining Uses of Carbon Seal Rings

PURE Pure Carbon Co., Inc.
2130 Nobrac St., St. Marys, Pa.

▲ Mention Item NED-6166 when writing ▲

Something YOU SHOULD BE FAMILIAR WITH



ARMSTRONG Steam Type UNIT HUMIDIFIERS

For only a few cents a day, Armstrong steam type humidifiers will assure you the benefits of uniform and controlled humidity Sensitive Friez Humidistat assures accuracy within close limits. A model capable of humidifying as much as 40,000 cu. ft. lists for only $100. Simple, economical, quiet . . . installed like a unit heater. Send for detailed information now.

Ask For Bulletin No. 158 How humidification aids processing, saves money, etc. Complete data on steam type humidifiers. Write today.

Armstrong Machine Works
81: Maple Street, Three Rivers, Michigan

ARMSTRONG STEAM TRAP — ARMSTRONG

▲ Mention Item NED-6167 when writing ▲

NEW JOEX TORQUE WRENCH

another JO LINE TOOL Pat. No. 2172561

Gives PRODUCTION LINE TORQUING with LABORATORY ACCURACY

TAMPER-PROOF · POSITIVE · PRACTICAL & UNIVERSAL · STURDY · COMPACT

Only your tool crib can change the setting to meet your requirements.

No dials, no needles, NO GUESSWORK. ACCURATE WITHIN ARMY AIR FORCE SPECIFICATIONS.

Any Standard socket or adaptor can be used with JOEX to provide accurate torquing of Nuts, Bolts, Tubing Fittings, Screws, etc.

JOEX wrenches have passed rigid tests for shock, overload, impact, and have proven they can take a beating and remain accurate.

Has small head and body — fits hard-to-get-at spots as no other tool will.

Manufactured by
JO MANUFACTURING CO.
South Gate, California

SOLD BY
JOYCE & ASSOCIATES
ROOM 818, WASHINGTON BLDG.
LOS ANGELES 13, CALIF.

▲ Mention Item NED-6168 when writing ▲

THIS VALVE Cures Old-Style Valve Nightmares!

NO LEAKS OR DRIPS
NO GALLING OR FREEZING
NO STICKING. NO WEAR
NO WIRE-DRAWING
NO RE-SEATING
Practically No Maintenance

HILLS-McCANNA SAUNDERS PATENT DIAPHRAGM VALVES

The Logical Valve for Chemicals • Acids • Alkalis • Aqueous Solutions • Semi-Solid Substances • Compressed Air • Oxygen Acetylene Gases • Hot or Cold Water • Etc.

When you purchase valves, you naturally are looking for dependable service, coupled with the least amount of repairs. But, do you get it? With Hills-McCanna Valves you are sure of unfailing service from the start, because they have nothing to go wrong. Their design is based upon an entirely new and different closing principle as illustrated. They are composed of 3 simple units; a bonnet—diaphragm—and body. The working parts are in the top unit, the diaphragm in between . . . separating all working parts from the flow.

That's the difference—and they cure all conventional valve nightmares. Prove it to yourself on that next valve replacement. You'll be amazed at the long, trouble-free service Hills-McCanna Valves will give you.

Catalog V-44 on request

HILLS-McCANNA CO.
2455 NELSON STREET, CHICAGO, 18
PROPORTIONING PUMPS • AIR & WATER VALVES • CHEMICAL VALVES
MARINE VALVES • FORCED-FEED LUBRICATORS • DOWMETAL CASTINGS

▲ Mention Item NED-6169 when writing ▲

NEW Literature AND Catalogs

SPRINGS—448-page illustrated book, "Mechanical Springs," by A. M. Wahl is concerned with design, selection and specification of various types of mechanical springs—emphasis is laid on properties of spring materials—curves and tables give quick access to stress, deflection and loading values—price is $6.00 postpaid—published by Penton Publishing Co., Penton Building, Cleveland 13, O.

▲ Mention Item NED-6170 when writing ▲

CONTACT PYROMETER—6-page illustrated bulletin No. 3511-B is descriptive of Alnor Pyrocon, the hand held portable pyrometer for temperature readings of flat or curved, moving or stationary surfaces—issued by Illinois Testing Laboratories, Inc., 430 N. LaSalle St., Chicago 10, Ill.

▲ Mention Item NED-6171 when writing ▲

SMALL V-BELT DRIVES—44-page illustrated handbook presents information on industrial fractional horsepower V-belt drives—complete specifications and prices are listed—issued by B. F. Goodrich Co., Dept. E, 500 South Main St., Akron, O.

▲ Mention Item NED-6172 when writing ▲

HYDRAULIC EQUIPMENT—60-page illustrated bulletin No. 50 contains detailed information on pumps and hydraulic equipment—manufacturing facilities and service of company are also described—issued by The Aldrich Pump Co., Allentown, Pa.

▲ Mention Item NED-6173 when writing ▲

MINING EQUIPMENT—4-page illustrated bulletin covers line of mining equipment—includes such items as skip buckets, storage plants, lowering spirals and winding drums—issued by Robt. Holmes & Bros., Inc., Danville, Ill.

▲ Mention Item NED-6174 when writing ▲

TURBINE FLOW METERS—6-page illustrated bulletin No. 420 describes operation of W-K principle in combination with MO meter for measuring flow through turbines—issued by Simplex Valve & Meter Co., Sixty-eighth and Upland Sts., Philadelphia 42, Pa.

▲ Mention Item NED-6175 when writing ▲

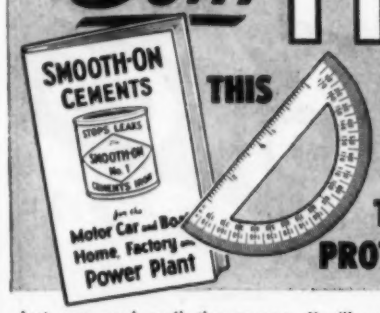
HYDRAULIC PRESSES—4-page illustrated bulletin No. 650 A covers line of hydraulic presses for extruding and molding ceramics—specifications are listed for various types—issued by Watson-Stillman Co., P. O. Box 26, Roselle, N. J.

▲ Mention Item NED-6176 when writing ▲

V-BELT DRIVES—Bulletin No. B6331 gives information on various V-belts, sheaves and drives in line of V-belt drive equipment—five special kinds of V-belts each designed for specific type or protection are reviewed—issued by Allis-Chalmers Mfg. Co., 6900 Norman St., Milwaukee 1, Wis.

▲ Mention Item NED-6177 when writing ▲

Both FREE



THIS HANDY REPAIR HANDBOOK

THIS USEFUL PROTRACTOR RULE

Just sign and mail the coupon. You'll receive: 1—An accurate, durable protractor, angles reading in both directions, straight side scaled to inches. 2—The 40-page Smooth-On Repair Handbook showing how to make metal repairs easily, economically, lastingly. Clear directions. 170 diagrams. How to stop leaks, seal cracks, tighten loose parts in home, shop, garage and plant equipment. A necessity for every engineer and maintenance man.

Buy Smooth-On in 7-oz., 1-lb. cans and larger kegs from your supply house.

MAIL IT TODAY The SUPPLY IS LIMITED

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570 Communipaw Avenue
Jersey City 4, New Jersey

Please send the FREE protractor and Smooth-On Handbook.

Name .....
Address .....
10-44 .....

Do it with SMOOTH-ON

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SHAKEPROOF LOCK WASHERS

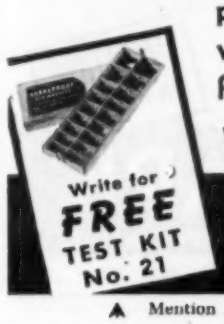
ACTUALLY LOCK TIGHTER UNDER VIBRATION!

THE STANDARD OF LOCKING EFFICIENCY!

Powerful multiple tapered-twisted teeth biting into both surfaces provide positive vibration protection for any screw or nut connection!

A tight strut-action lock is produced by each tapered-twisted tooth at initial contact!

Under vibration, spring-tension forces teeth to bite deeper and increases locking power!



Write for FREE TEST KIT No. 21

SHAKEPROOF inc.
Distributor of Shakeproof Products
Manufactured by ILLINOIS TOOL WORKS
2501 N. Keeler Ave. • Chicago 39, Ill.
Plants at Chicago and Elgin, Illinois

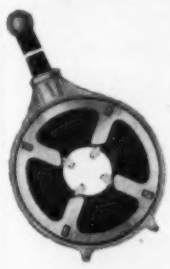
▲ Mention Item NED-6179 when writing ▲

Workholder sets to pipe size instantly

Dies set to pipe size in 10 seconds

Here's your next new work-saver die stock!

RIGID No. 65R—Perfect threads on 1" to 2" pipe with one set of dies



No. 65R looks like this in front.

● Start your post-war right—with a threader you'll enjoy using. No bother changing dies in this RIGID—spin it up, spin it down and it's set for micrometer perfect threads on 1", 1¼", 1½" or 2" pipe. A quick turn of gauge plate sets workholder, no bushings. Threads with surprisingly little effort. High-speed steel dies: rugged steel-and-malleable construction. Ask for it at your Supply House.

THE RIDGE TOOL COMPANY, ELYRIA, OHIO

RIGID ★ PIPE TOOLS ★

▲ Mention Item NED-6180 when writing ▲

FLAMENOL BUILDING WIRE
For Complete Wiring Systems

Type SN FOR DRY LOCATIONS

Type SNW FOR WET LOCATIONS

Approved By Underwriters'

The recent addition of Type SNW to the thermoplastic insulated Flamenol* Building Wire line enables you to use this high quality, small diameter wire for complete installations. The new Type SNW Flamenol has all the time-tried advantages of Type SN Flamenol—long life, high dielectric and mechanical strength, resistance to oils, acids and alkalies—and, in addition, its insulation has low moisture absorption. *Use Type SNW Flamenol wire for wet locations and Type SN Flamenol wire for dry locations.*

For further information, see the nearest G-E Merchandise Distributor or write to Section W1043-48, Appliance and Merchandise Department, General Electric Company, Bridgeport, Conn.

*Reg. U.S. Pat. Off.

BUY WAR BONDS AND KEEP THEM

GENERAL ELECTRIC

Hear the General Electric radio programs: "The G-E All Girl Orchestra," Sunday, 10 p.m. EWT, NBC. "The World Today," news every weekday 6:45 p.m. EWT, CBS.

▲ Mention Item NED-6181 when writing ▲

MOVE or PILE

with a Baker "Baby" Bulldozer. Little brother to the big Baker Bulldozers that are making it tough for the Axis.

Blade is raised or lowered hydraulically. Rugged, inexpensive. Send for Bulletin 835.

THE BAKER MFG. CO.
519 Stanford Ave., Springfield, Ill.
"If It Concerns Victory, It Concerns Us"

Shavings
Borings
Flock
Refuse
Cinders
Coal
Sponge Iron
Foundry Sand
Tanbark
Cullet
Tankage
Sludge, etc.

BAKER *The Modern Tractor Equipment Line for* EARTH MOVING, LEVELING AND GRADE BUILDING, SNOW REMOVAL, ROAD MAINTENANCE

▲ Mention Item NED-6182 when writing ▲

THIS NEW BOOKLET TELLS HOW TO AVOID TWISTING OFF SCREWS, STUDS AND BOLTS

Make shearing a thing of the past! Save time by eliminating preventable damage caused by overtightening! It's no trick at all when you have the proper tables and graphs on relative shearing torques—and apply this information in use of handy, accurate Apco Mossberg Torque Tools.

This booklet contains newest information on approximate torques required to twist off screws at root diameter made of materials with a tensile strength of 100,000 lbs. per square inch; shearing diagram; formulae for checking and adjusting torque tools; tables for determining recommended limits, and general range of torque for your product.

FREE

Write today for "Facts and Figures on Torque Tools". APCO MOSSBERG COMPANY, 161 Lamb Street, Attleboro, Massachusetts. You will receive this helpful booklet without cost by return mail.

APCO MOSSBERG CO.
161 LAMB STREET
ATTLEBORO, MASS., U. S. A.

▲ Mention Item NED-6183 when writing ▲

New Literature—Continued

AVAILABILITY LISTS—24-page illustrated monthly industrial availability booklet shows items available on priority for immediate delivery from stock in line of radio and electronic supplies—monthly issue offered free to any engineers or purchasing agents requesting it—issued by Walker-Jimieson, Inc., 311 S. Western Ave., Chicago 12, Ill.

▲ Mention Item NED-6184 when writing ▲

WIRE ROPE SHEARS—8-page illustrated No. A-6 Edition 3 describes improved features of hydraulic and hand shears for cutting commercial grade wire rope, flat bars, round bars and varying shapes and metals—issued by Watson-Stillman Co., P. O. Box 26, Roselle, N. J.

▲ Mention Item NED-6185 when writing ▲

PERMANENT MAGNET—8-page illustrated bulletin gives information on design, production and applications of permanent magnets for industry—issued by The Arnold Engineering Co., 147 E. Ontario St., Chicago 11, Ill.

▲ Mention Item NED-6186 when writing ▲

VARIABLE SPEED CONTROL—4-page illustrated bulletin No. SJ-44 describes Speed-Jack drives for variable speed control—specifications and installation data are included—issued by The American Pulley Co., Dept. 227, 4200 Wissahickon Ave., Philadelphia 29, Pa.

▲ Mention Item NED-6187 when writing ▲

FLOOR TREATMENT—14-page bulletin, "Floor Treatment and Maintenance Job Specifications," covers proper and economical treatment of various types of floors used in industrial, commercial, public and private institutions—issued by The Hillyard Co., St. Joseph 1, Mo.

▲ Mention Item NED-6188 when writing ▲

ENGINE BEARINGS—96-page illustrated manual contains needed information to assure correct selection and installation of bearings—includes tables showing crankshaft and bearing dimensions, tolerances and oil clearances for all makes of cars, trucks, buses and tractors—issued by Clawson & Bals, Inc., 4701 W. Lake St., Chicago 44, Ill.

▲ Mention Item NED-6189 when writing ▲

NITROCELLULOSE—54-page illustrated booklet discusses properties and uses of soluble nitrocellulose, base for plastics, lacquers, coated textiles and many other products—information is result of many years of research work—issued by Hercules Powder Co., Cellulose Products Dept., Wilmington, Del.

▲ Mention Item NED-6190 when writing ▲

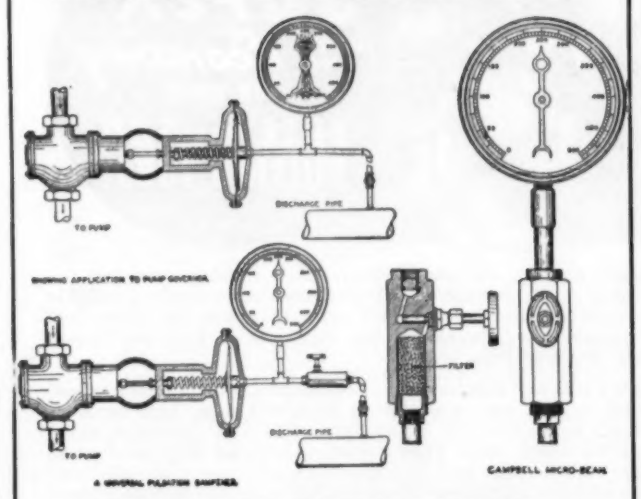
pH CONTROL—14-page illustrated bulletin No. 14 is summary of materials and processes developed for aviation maintenance through pH control—issued by Kelite Products, Inc., 909 E. Sixtieth St., Los Angeles 1, Calif.

▲ Mention Item NED-6191 when writing ▲

WELDING SYMBOLS—17 x 22-inch illustrated wall chart shows basic characters of welding symbols recommended as American Standard by The American Welding Society—chart is suitable for hanging on wall of drafting room and welding booth—issued by The Hobart Bros. Co., Hobart Square, Troy 1, O.

▲ Mention Item NED-6192 when writing ▲

KILLS PULSATION



INSTALL THE AMAZING CAMPBELL

MICRO-BEAN

Ideal for all governors and gauge lines. A super-sensitive valve mechanism. Very simple design. Will not pinch off over an extreme pressure range. Does what an ordinary valve can't do. Unique taper design minimizes tendency to shut off to approximately 2% of what it would be with an ordinary valve. Handles steam, fuel oil, air, gas, water. Ask for Bulletin.

J. A. CAMPBELL CO.
645 E. Wardlow Road — Long Beach, Calif.

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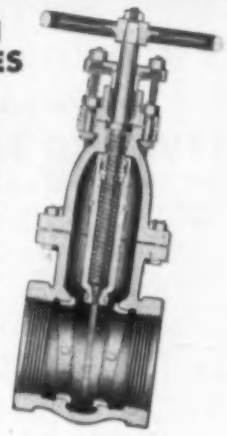
Sizes and Types for Every Need

CRANE STANDARD IRON BODY WEDGE GATE VALVES



Rated at 125 pounds steam; 200 pounds water, oil, gas, non-shock, (sizes up to 12 in.) these valves meet countless service needs. Made in all sizes; in Non-Rising Stem, OS&Y, Quick-Opening, Underwriters', and Marine Cargo patterns. Have flanged, screwed or hub ends. Engineered and built by Crane with newest developments in every detail, these valves deliver finest flow control service in every suitable application. Crane Co.'s 89-year leadership in piping equipment assures it.

ASK FOR BULLETIN 1584

For a quick picture of why Crane Iron Body Wedge Gate Valves work better and last longer, and a typical showing of the line, write for Bulletin 1584. Or, ask your Crane Representative for a copy. Crane Co., General Offices, 836 S. Michigan Ave., Chicago 5, Ill. *Branches and Wholesalers Serving All Industrial Areas.*

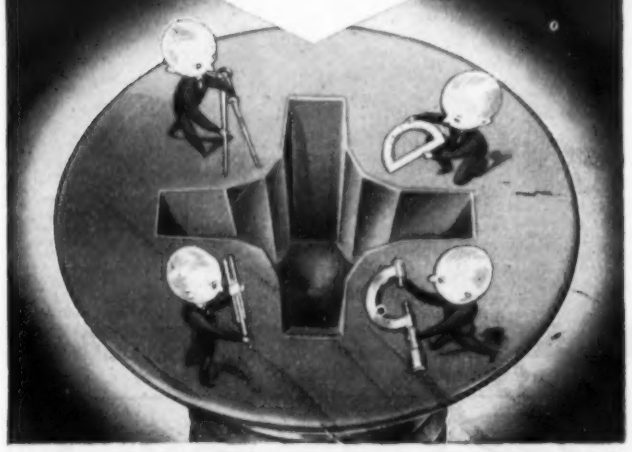
CRANE *For Anything in Piping Materials, Call CRANE!*

VALVES • FITTINGS • PIPE • PLUMBING • HEATING • PUMPS

▲ Mention Item NED-6194 when writing ▲

IT TAKES A LOT OF know-how TO DESIGN AN Engineered SCREW RECESS

. . . AND THE PHILLIPS RECESS HAS WHAT IT TAKES!



TAKE A LOOK at the center corners of the Phillips Recess above—and get a picture of some real screw engineering!

THESE CORNERS *aren't square!* They're rounded into a series of 16 flat planes. It's these flat planes that *hold* drivers in the Phillips Recess so well.

THEN NOTICE how the 4 wings and the 16 flat planes are angled. It's the scientically determined degree of these angles that eliminates fumbling starts . . . makes it possible to use full turning power . . . makes it hard to burr Phillips Head Screws, and reduces wear on Phillips Bits and Drivers.

FOR ANOTHER instance of Phillips engineering ingenuity, note the depth of the Phillips Recess. It's not too deep . . . not too shallow. It's just the right depth to give Phillips Recessed Head Screws the strength to stand up under the heaviest driving pressures. Just the right depth to give maximum turning power with a minimum of effort . . . to keep drivers in proper alignment with screws!

COSTS LESS! Switch to screws with the scientifically engineered Phillips Recess—they cost less because they help you produce more! Available in any head style, type, or size.

PHILLIPS *Recessed Head* **SCREWS**

Wood Screws • Machine Screws • Self-tapping Screws • Stove Bolts

24 SOURCES

American Screw Co. • Atlantic Screw Works • The Bristol Co. • Central Screw Co. • Chandler Products Corp. • Continental Screw Co. • The Corbin Screw Corp. • General Screw Mfg. Co. • The H. M. Harper Co. • International Screw Co. • The Lamson & Sessions Co. • Manufacturers Screw Products • Milford Rivet and Machine Co. • The National Screw & Mfg. Co. • New England Screw Co. • Parker-Kalon Corp. • Pawtucket Screw Co. • Pheoll Manufacturing Co. • Reading Screw Co. • Russell Burdsall & Ward Bolt & Nut Co. • Scovill Manufacturing Co. • Shakeproof Inc. • The Southington Hardware Mfg. Co. • Wolverine Bolt Co.

▲ Mention Item NED-6195 when writing ▲

POSITION WORK...
Convenient for Your Operators

WITH

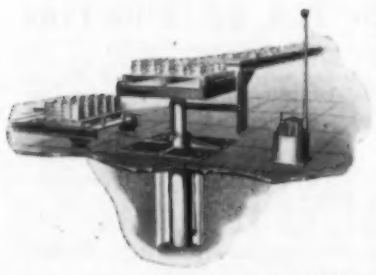
LYON-Raymond Hydraulic ELEVATING TABLES

SPECIAL MODELS to Meet Specific Requirements

Standard stock models have many uses. Write for literature.

For example—a special elevating table (illus. below) was developed for loading pigs of metal from a roller conveyor onto a pallet placed on the elevating table. After each tier is in place, table is lowered to the proper height to permit *easy, safe* transfer of the heavy metal. Finally the full pallet load is rolled onto an outgoing conveyor located flush with the table in its lowest position.

To answer your problems of positioning work to the most convenient and safe height for the operator, LYON-Raymond engineers are prepared to recommend applications or design special models of their numerous types of material handling equipment.



LYON-Raymond Corporation
376 Madison St.
Greene, N. Y.

▲ Mention Item NED-6200 when writing ▲

AMERICAN Phillips SCREWS
for Top Speed and Lowest Cost of Assembly

...IN TODAY'S WAR EQUIPMENT

In the U. S. Army crash boats (shown above) and landing barges built by the Owens Yacht Company of Baltimore, American Phillips Screws are used to make *speedier, stronger fastenings.* Owens workers, using power drivers, make clean and flush fastenings right down the line. No fumbling starts, no crooked driving, no gouged work.

...IN TOMORROW'S PEACETIME PRODUCTS

Owens Yacht Company's peace-time pleasure craft, like their present-day war craft, will feature sturdy, ship-shape fastenings made by power-driven American Phillips Screws. In fact, the matchless speed and controlled accuracy of American Phillips fastenings will help this well-known boat builder to meet the pent-up, urgent demand for his quality product . . . and still maintain his rock-bottom cost.

4-WINGED DRIVER CAN'T TWIST OUT OF ENGINEERED TAPERED RECESS IN AMERICAN PHILLIPS SCREW HEAD

AMERICAN SCREW CO., PROVIDENCE, R. I.
Chicago 11: 589 E. Illinois St. *Detroit 2:* 502 Stephenson Bldg.

Put the Screws on the enemy...BUY BONDS!

▲ Mention Item NED-6201 when writing ▲

BIG NEWS! for BEARING USERS

Non-Scoring
Lowest Friction
Incredible Wear Life
Withstand impact loads and shocks that are beyond the endurance of metal bearings
Non-Corrosive
Acid-Resistant
Easy to lubricate
Made in types for—
Water Lubrication
Grease or Oil Lubrication
Some Self-Lubricated Applications

The incredible achievements of GATKE Moulded Fabric Bearings render obsolete all previous yardsticks. Write for booklet that gives characteristics and performance results on typical applications.

GATKE CORPORATION
220 N. LaSalle St. Chicago

▲ Mention Item NED-6202 when writing ▲

SAVE NOW... fight inflation...

...and these are things worth saving for!

SAVE FOR CHILDREN! It costs money to have a child, to raise a child. But isn't it worth every penny it costs and more? Save now... while money's coming in . . . have and enjoy your children while you're young.

SAVE FOR COLLEGE! If you went to college, you want your children to go. If you didn't—you want them to have the good life you missed. Start your college fund now—while you're earning good money.

SAVE FOR A HOME! A house of your own, a garden to dig in, room-to-grow for the children—every man and his wife want that. Houses are hard to get, now. Why not save for your house—while the saving's good?

SAVE FOR A TRIP! Today's no time to travel. But after the war—aren't you rarin' to go? To Yellowstone or the Smokies, or the new Alaska highway. Saving today can finance glorious spending then.

SAVE TO RETIRE! Sooner than you think, the day will come when a place in the country looks better to you than an active life in town. Social security is good—Supplement it by planned saving.

SAVE FOR SAFETY! Money's easy today? But it wasn't always—and it may not be again. The man who has money laid by, helps prevent depression—can ride out hard times if they come.

SAVE TO SAVE AMERICA! And only by keeping prices down—saving, not spending—can we head off inflation, keep America a stable, happy place for our boys. For your sake, for *theirs*—SAVE!

4 THINGS TO DO to keep prices down and help avoid another depression

1. Buy only what you really need.
2. When you buy, pay no more than ceiling prices. Pay your ration points in full.
3. Keep your own prices down. Don't take advantage of war conditions to ask for more—for your labor, your services, or the goods you sell.
4. Save. Buy and hold all the War Bonds you can afford—to help pay for the war and insure your future. Keep up your insurance.

A United States war message prepared by the War Advertising Council; approved by the Office of War Information; and contributed by this magazine in cooperation with the Magazine Publishers of America.

New Literature—Continued

BALL BEARING END BELLS—8-page illustrated catalog, "Electric Motor Maintenance", describes ball bearing end bells for conversion of sleeve bearing electric motors to ball bearing operation, utilizing original shaft and insuring longer bearing life and less maintenance cost, time and material—issued by Keystone Electric Co., 1220-1230 Ridgely St., Baltimore 30, Md.

▲ Mention Item NED-6203 when writing ▲

WIRE WOUND RESISTORS—28-page catalog No. 10E includes specifications and engineering data on complete line of Koolohm wire wound resistors in addition to listing various types not included in previous publications—issued by Resistor Div., Sprague Electric Co., North Adams, Mass.

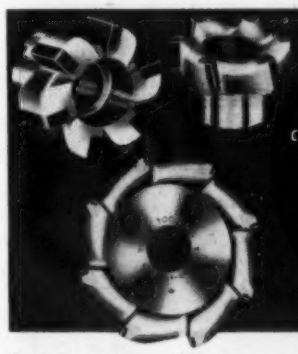
▲ Mention Item NED-6204 when writing ▲

ANTI-SPATTER FLUID—6-page illustrated bulletin describes in detail practical and scientific tests made to determine effects of using anti-spatter fluid in welding—advantages and method of application of No-Spat welding fluid are outlined—issued by The Midland Paint and Varnish Co., 9115 Reno, Cleveland, O.

▲ Mention Item NED-6205 when writing ▲

BUILDING NECESSITIES—20-page illustrated catalog describes line of building necessities such as incinerators, window wells, fireplace equipment, ventilating brick, dampers and coal chutes—issued by The Majestic Co., 770 Erie St., Huntington, Ind.

▲ Mention Item NED-6206 when writing ▲



HERE'S SUPER CARBIDE TIPPED Economy FOR YOUR FACE AND END MILLING JOBS!

Faster cutting, cleaner cutting, finer finishes, greater accuracy . . . these carbide tipped efficiencies are now available for your face milling and shell end milling jobs. For Super Tool engineers have developed this new line of Carbide Tipped Shell End and Face Mills!

Here's another step forward in carbide tipped standardization! These cutters are available in standard sizes, both for non-ferrous materials and in the Super NEGRAK (negative rake) type for cutting steel. They are manufactured on a production basis and the shell end mills may be purchased in the left-hand type at standard prices. When you buy a Super Carbide Tipped Face Mill or Shell End Mill, you enjoy economies that start with the first cost and continue through every operation of the cutter's exceptionally long life.

Super Carbide Tipped Shell End Mills and Face Mills are worthy additions to the line of Super Carbide Tipped Tools. Write TODAY for details of the complete Super Tool line including these new Super Shell End and Face Mills.

SUPER TOOL COMPANY
Carbide Tipped Tools
21650 Hoover Rd., Detroit 13, Mich. 4105 San Fernando Rd., Glendale 4, Cal.

▲ Mention Item NED-6207 when writing ▲

"This is Where Nuts Shake Loose,"
*say over a thousand fleet operators in recent survey**

1. Universal Joints and drive shaft flanges	59.4%	7. Wheels	36.2%
2. Rear axle flanges	56.5	8. Backing Plate to Axles	23.0
3. Spring clips	54.3	9. Clutch and brake	13.7
4. Bumpers	49.5		
5. Body Bolts	45.0		
6. Engine supports	39.0		

and 52 other parts of the truck assembly, as well as 24 places in supplementary equipment.

1,160 Fleet Supervisors put their finger on the LOOSE NUT MENACE!

Long life and high use are vital factors to fleet operators. To solve the loose nut menace, they call for an all-metal, one-piece nut that *can't shake loose.*

In the No. 1 danger spot named above, Boots Self-Locking Nuts held fast through 12 months testing of hard-driving wear and tear.

With its built in steel lock, the all metal Boots Nut grips tight. It can be used again and again, is unaffected by water, oil, chemicals.

The ALL-METAL LOCK is Built-In Here

BOOTS SELF-LOCKING NUTS
"There's No Excuse for a Nut Shaking Loose"
Boots Aircraft Nut Corporation
General Offices, New Canaan, Conn.

*OPERATORS OF 110,000 MOTOR VEHICLES say that use of a vibration-proof nut like this would save tens of thousands of dollars in service costs.

Representatives in New York • Chicago • Detroit • Indianapolis • Los Angeles • Kansas City • Dallas • Toronto • Montreal • Vancouver

▲ Mention Item NED-6208 when writing ▲

OH YES! THIS NEW SAW CUTS NON-FERROUS METALS

DoALL Buttress — THE NEW WIDE-SPACED HARD TOOTH SAW

Does Faster, Cleaner Cutting of:

●MANGANESE ●ALUMINUM ●ZINC
●BRASS ●COPPER ●BRONZE
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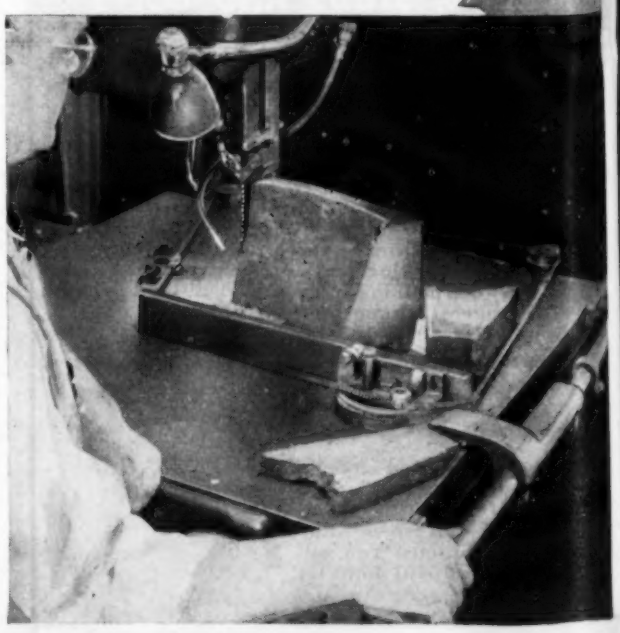

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Pat. & Pats. Pend.

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Up to 800 lb. drum or barrel loads are easily handled by one man. Loads automatically and transfers load easily on roller bearings.

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New Literature—Continued

SPOT WELDING—58-page illustrated catalog No. CE-44W shows all types of standard and many special resistance welding machines in capacity range from 3 kilovolt-amperes to heavy duty models up to 500 kilovolt-amperes—issued by Eisler Engineering Co., 753 S. Thirteenth St., Newark 3, N. J.

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FIRE ALARMS—40-page illustrated bulletin No. 1044 covers line of fire alarm signaling systems and apparatus—issued by Faraday Electric Corp., Adrian, Mich.

▲ Mention Item NED-6214 when writing ▲

INDOOR FUSE MOUNTINGS—12-page illustrated bulletin No. 222-C is descriptive of indoor fuse mountings and fused disconnects for S & C liquid fuse—dimensional data for various assemblies are included along with details on fuse clips and switch sticks and tongs for handling fuses—issued by Schweitzer & Conrad, Inc., 4435 Ravenswood Ave., Chicago 40, Ill.

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HYDRAULIC PUMPS—16-page illustrated bulletin No. 440 covers line of Hydro-Power gear pumps for medium pressure hydraulic application—issued by Hydro-Power Systems, Inc., Mount Gilead, O.

▲ Mention Item NED-6216 when writing ▲

ARC WELDING—39-page illustrated vest pocket checking pad shows by series of questions how line of arc welders and accessories can cut costs, speed work, improve quality and increase profits of production—issued by The Hobart Bros. Co., Box DM 603, Troy, O.

▲ Mention Item NED-6217 when writing ▲

WINDUP MACHINE—4-page illustrated folder is descriptive of constant speed, constant tension windup machine for wire, cable rubber, tapes, fabrics and other continuous materials—operation, engineering features and specifications are outlined—issued by The Industrial Oven Engineering Co., 11621 Detroit Ave., Cleveland 2, O.

▲ Mention Item NED-6218 when writing ▲

DIE HANDLING TRUCKS—6-page illustrated bulletin No. 135 shows how hydraulic die handling trucks move dies from rack to press and back again more efficiently, more economically and with greater safety than hand methods—various models are pictured—issued by Lyon-Raymond Corp., 1613 Madison St., Greene, N. Y.

▲ Mention Item NED-6219 when writing ▲

ANNIVERSARY—56-page illustrated booklet is entitled, "The First 25 Years"—it commemorates company's silver anniversary, giving history of company and indication of future—issued by Ex-Cell-O Corp., 1238 Oakman Blvd., Detroit, Mich.

▲ Mention Item NED-6220 when writing ▲

CARBIDE TOOLS & BLANKS—48-page illustrated catalog No. 44 is new and reorganized issue to which several features have been added—contains complete specifications—issued by Kennametal Inc., 171 Lloyd Ave., Latrobe, Pa.

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with Safer STANZOILS

If your employees work with acids, oils, caustics, it pays you to protect their hands with Stanzoil gloves of DuPont's neoprene. More safety because of resistance to damage by such materials, last 3 to 7 times longer than rubber — cut cost per day's wear, injury claims, lost time. Popular with workers, comfortable — the choice of hundreds of industries. Ask about *new lightweight RSW-13 with remarkable non-slip fingers.* Write today for complete facts.

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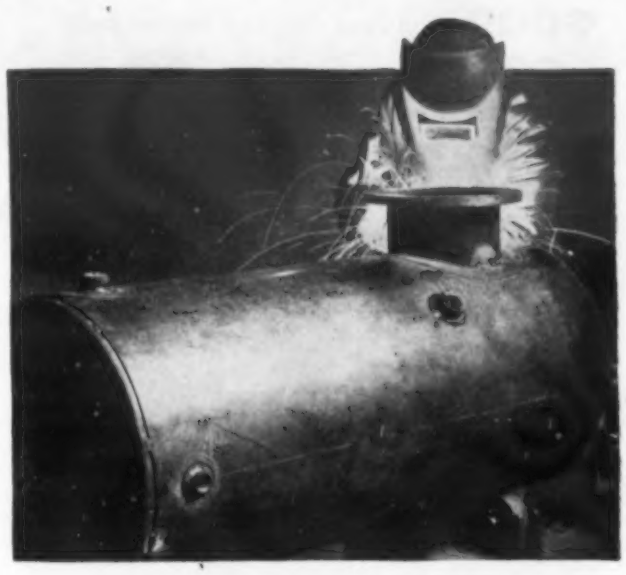

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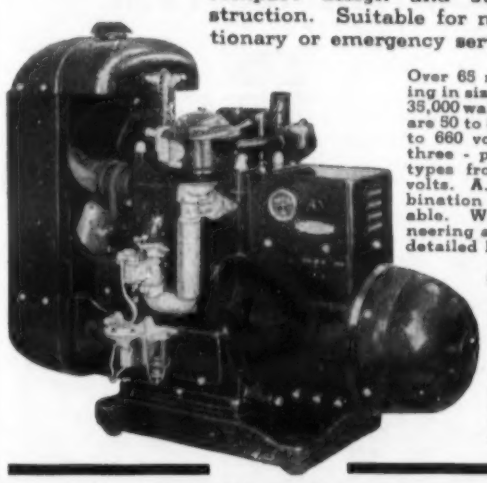

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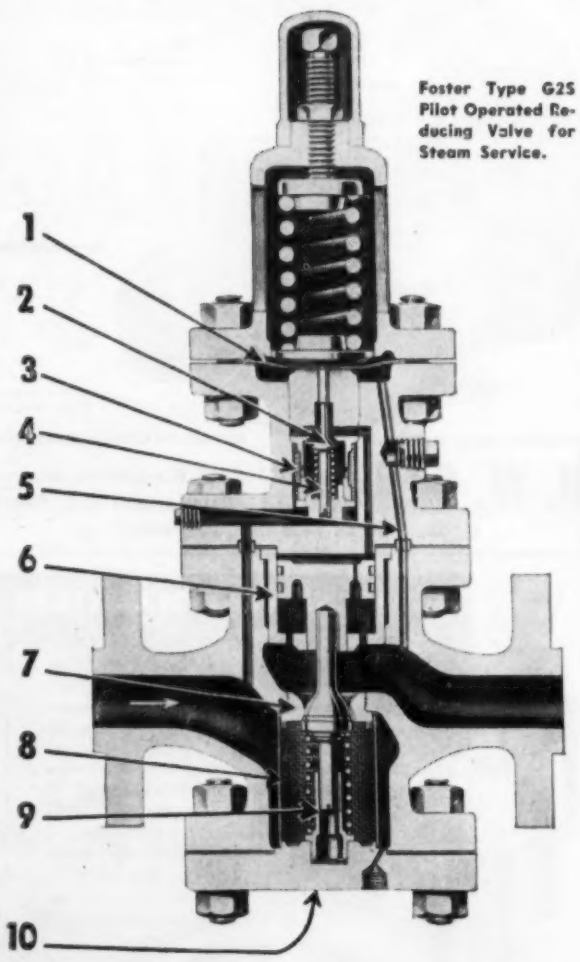
Saves Maintenance Time



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10-P E-3

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New Literature—Continued

MATERIALS HANDLING—40-page illustrated catalog No. 7-11 contains complete descriptions and specifications on line of materials handling equipment—catalog is appended with reproductions of WPB regulations that govern purchases of industrial trucks and tractors—issued by The Mercury Mfg. Co., 4128 S. Halsted St., Chicago 9, Ill.

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PULP DENSITY SCALES—8-page illustrated bulletin No. S1C-B is descriptive of pulp density scales for fast, accurate specific gravity determination of pulps and liquids—issued by Denver Equipment Co., 1400 Seventeenth St., Denver 17, Col.

▲ Mention Item NED-6229 when writing ▲

GRINDING WITH OIL—12-page illustrated booklet, "Grinding With Oil" discusses use of straight oils for thread grinding, gear grinding and other precision grinding operations—chart compares wheel markings of several grinding wheel manufacturers—issued by D. A. Stuart Oil Co. 2747½ S. Troy St., Chicago 23, Ill.

▲ Mention Item NED-6230 when writing ▲

UNIT HEATERS—12-page illustrated bulletin No. 44-U covers Electromode electric unit heaters—includes standard sizes ranging from 1.5 to 60 kilowatts for ceiling, wall or post suspension although six smaller sizes, 1.5 to 7.5 kilowatts are described as portable or suspension types—issued by Electric Air Heater Co., 400 S. Byrkit St., Mishawaka, Ind.

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RADIO & ELECTRONIC BOOK GUIDE—28-page illustrated "Radio and Electronic Book Guide" lists wide selection of publications on radio, electronics and related subjects—listings are divided into two parts: (1) classified directory by subject (2) listing under publisher by author and title with brief summary of contents—issued by Allied Radio Corp., Dept. N-D, 833 W. Jackson Blvd., Chicago 7, Ill.

▲ Mention Item NED-6232 when writing ▲

SEAMLESS STEEL TUBING—320-page illustrated loose-leaf seamless steel tube data book is divided into four principal sections, with guide index, covering general data, mechanical tubing, pressure tubing and reference tables—supplementary sheets with new data will be supplied from time to time—price is $2.50—issued by Seamless Steel Tube Institute, Gulf Building, Pittsburgh 19, Pa.

▲ Mention Item NED-6233 when writing ▲

PACKAGING—20-page illustrated revised manual incorporates latest government specifications and other advancements in packaging methods for war materiel—fourteen samples of wrappings are included—issued by Sherman Paper Products Corp., Dept. N-3, Newton Upper Falls 64, Mass.

▲ Mention Item NED-6234 when writing ▲

PHENOL & VULCANIZED FIBER—6-page illustrated folder is compilation of concise information to facilitate correct specification of both phenol fiber and vulcanized fiber in parts fabrication—issued by N. S. Baer Co., 4 Montgomery St., Hillside, N. J.

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IRONBOUND SKIDS AND PLATFORMS

IRONBOUND
MATERIALS-HANDLING EQUIPMENT

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Adjustable joint as used with "Veejet" flat spray nozzles. Various sizes are available.

Spraying installations involving changes in spray direction work better with time-saving Spraying Systems Adjustable Joints. Used between headers and spray nozzles, these joints permit easy and quick final adjustment of spray direction in washing machines, rinsing processes, etc.

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SPECIALISTS IN THE DESIGN AND MANUFACTURE OF SPRAY NOZZLES

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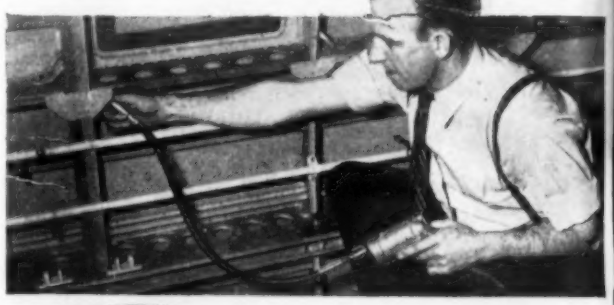

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A Stow Flexible Shaft that fits into your drill chuck is the answer to awkward, close-quarter drilling. The operator gets around obstructions easily, is relieved of weight and bulk. Fatigue is minimized, accuracy increased. STOW Flexible Shafts are available with 45 and 90° angle heads, or straight spindle, and in various lengths. Stow's 69 years' experience manufacturing flexible shafts is your guarantee of long life and top efficiency.

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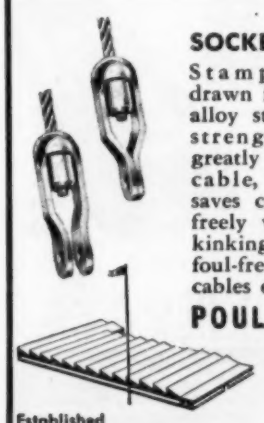
with P & N Sling Fittings, Hooks and Rings

DIRECT LINE SWAGED HOOKS

P & N Direct Line Swaged Hooks are made of stainless steel and so designed that the load is on a direct line from the cable. Tests have shown their holding factor is in excess of cable. Available for 1/16 to 1 inch cable.



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Terminal Box 2398
Los Angeles 54, California

Established 1922

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Reg. U. S. Pat. Off.
RAMP ELIMINATORS

This Ramp Eliminator saves time and trouble in moving material between basement and street level.

REVOLVATOR Hydraulic Elevators are widely used as ramp eliminators and press feeders, as well as floor to floor. Often practical for three story lifts. REVOLVATOR Hydraulic Elevators require no geared hoists or cables. Operate by oil in conjunction with electric pump or compressed air. Their simplicity, safety and economy make them extremely popular. Send for Bulletin 96J.

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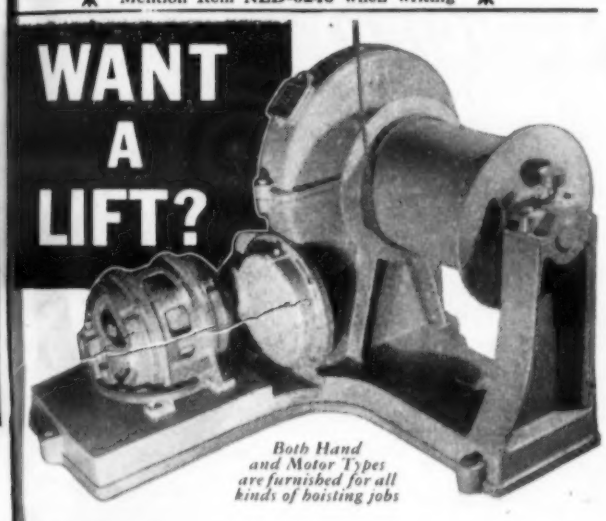

Both Hand and Motor Types are furnished for all kinds of hoisting jobs

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Bellevel—Bin Level Controls · Car Loaders · SealMaster Ball Bearings · Car Pullers · Winches · Saco Speed Reducers
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with P & N Sling Fittings, Hooks and Rings

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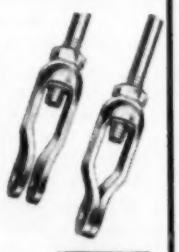

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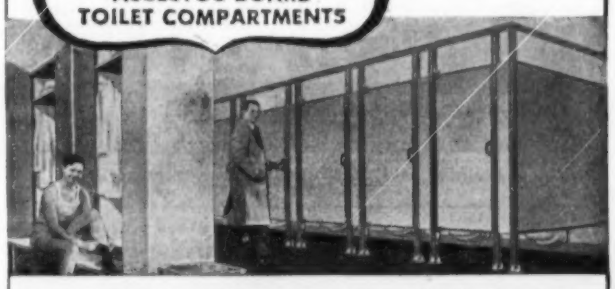
*Sanymetal** ASBESTOS BOARD TOILET COMPARTMENTS



Save Time and Money by Installing Sanymetal Toilet Compartments: Sanymetal offers two types of wartime toilet compartments; types for both temporary and permanent installations. Sanymetal Toilet Compartments are economically designed and built by specialists with over 29 years of experience, and embody convenience and sanitation in a degree unappreciated and unapproached, and usually overlooked by those lacking Sanymetal's long experience in this line. ***Doors and partition panels of Sanymetal Toilet Compartments*** are manufactured of asbestos-board 1⅛ inches thick, consisting of two sheets of compressed cement asbestos-board, laminated to two sides of a rigid, structural core of insulation board, resulting in a strong, rigid panel that is moisture, fire and wear resistant. ***Sanymetal Toilet Compartments provide a durable and rigid installation,*** free from dirt-collecting pockets and ledges, easy to keep clean. ***One order, one priority covers everything*** you need for complete installation of Sanymetal Toilet Compartments, even complete door hardware and partition fittings. ***Houseclean your toilet facilities now*** and safeguard the health of your workers. Use coupon for Bulletin No. 940—gives complete information on Sanymetal Asbestos-Board Toilet Compartments. For quick action, see "Partitions" in your phone book for local Sanymetal Representative. A special toilet room housecleaning check list is available on request.

THE SANYMETAL PRODUCTS CO., INC.
1719 URBANA ROAD • CLEVELAND, OHIO
* TRADE MARK REG. U. S. PAT. OFF.

*Sanymetal** TOILET COMPARTMENTS

The SANYMETAL PRODUCTS CO., Inc., 1719 Urbana Rd., Cleveland, O.
Please send us your Bulletin No. 940 on Sanymetal Asbestos-Board Toilet Compartments and Housecleaning Check List.

Name _____ Position _____
Address _____
City _____ State _____

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So WAR NERVES caught up with #681—he couldn't guess-count on that high-speed run!

That coil-winder ran him ragged! No matter how he watched and tried to count, the machine would outguess him, and he'd shut it down only to find another overrun or another shortage.

Here's how to put him back on the job:

Equip that coil-winder with a Veeder-Root High-Speed Predetermining Counter.

VEEDER-ROOT INCORPORATED
The Counting House of Industry Hartford 2, Connecticut
In Canada: Veeder-Root of Canada, Ltd., Montreal. *In England:* Veeder-Root Ltd. (new address on request)

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G-E LAMINATED TEXTOLITE

Sheet, Rods and Tubes

offer the following diverse and useful properties:

1. Light Weight
2. Low Moisture Absorption
3. Easy to Machine
4. High Dielectric Strength
5. Corrosive Resistance
6. High Specific Tensile Strength
7. High Specific Compressive Strength
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9. High Specific Impact Strength
10. High Resistance to Wear

Write Sec. M-245 for details. 1 Plastics Ave., Pittsfield, Mass.

GENERAL ELECTRIC
PD-245A

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Bear Developments Make Dy-Namic Balancing EASY . . . INEXPENSIVE!

PLAN NOW to rid every rotating part of the WOBBLIES of DY-NAMIC UNBALANCE so that your equipment will provide the longer life . . . greater freedom from repair . . . and higher efficiency buyers will be expecting of your post-war products. Users of Bear Machines report remarkable improvements in performance when the couple-force vibrations are eliminated through Simple—and Inexpensive Bear Dy-Namic Balancing. Bear engineers are ready to work with your engineers in designing your post-war products for EASY DY-NAMIC BALANCING. Without cost or obligation:

Submit Your Products Now For Bear Recommendations

Send For This New Catalog

Illustrates and describes the many types of Bear Balancing Machines now being used by hundreds of manufacturers in over twenty different industries. For your free copy write BEAR MFG. CO., Dept. NED, Rock Island, Illinois.

BEAR *DY-NAMIC BALANCING* MACHINES

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PROFIT BY "ABRASIVE" SUPERIORITY

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Farquhar
PORTABLE MACHINERY DIVISION
A. B. FARQUHAR COMPANY
YORK, PA.

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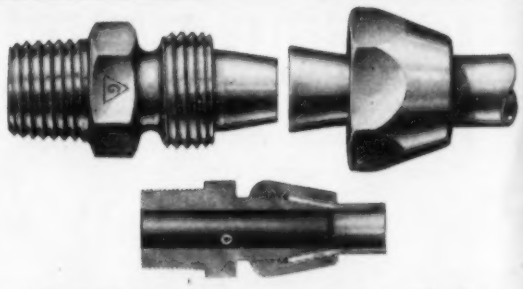

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provide leakproof joints even under maximum vibration and pressure

1. Long 10° tapered cone provides greater sealing area both inside and out.
2. When the nut is tightened, there is no shearing action to injure the tubing at the point of flare—instead the tubing is actually strengthened.
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6. All tubing easily flared to Superseal's 10° angle.
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8. Used on oil, gas, chemical and other lines.

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WHENEVER *Piping* IS INVOLVED

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OF DOMESTIC INDUSTRIES, INC.
578 N. Brownswood Avenue, Albion, Michigan
Eastern Factory: 400-408 Somerville Ave., Somerville (Boston) Mass.
Toronto, Canada: United Steel Corporation, Ltd., SC&T Co. Division

SERVICE
Trucks, Casters and Specially Designed Lifting and Hauling Units

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HOW AIR CARGO Loading HELPED DESIGN Better LIFT TRUCKS

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PULLMORE CLUTCHES

To manufacturers now designing and experimenting with similar products, we offer the assistance of our engineers' long clutch application experience — without obligation.

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POLISH • DRY
instruments, meters, gauges, electronic tubes, jewels, crystals, all small parts too difficult to clean manually or by any other method . . . in one complete self-contained unit. Write for catalog data . . . L&R Manufacturing Company 577 Elm Street, Arlington, New Jersey

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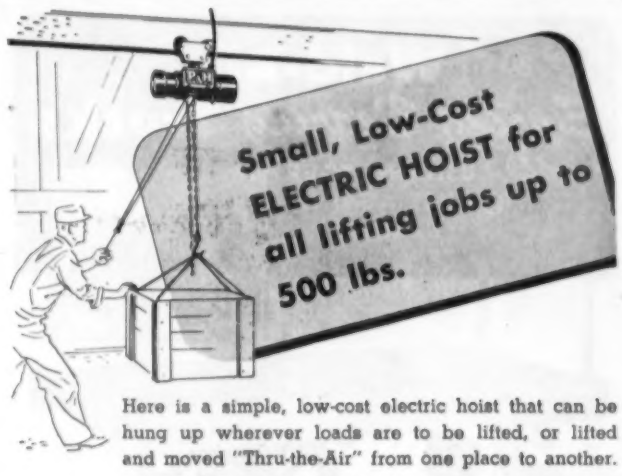

Here is a simple, low-cost electric hoist that can be hung up wherever loads are to be lifted, or lifted and moved "Thru-the-Air" from one place to another.

The P&H Handi-Lift Electric Hoist has a 500-pound capacity . . . is available with bolt, hook or trolley mounting . . . for hundreds of uses. Has simple one-hand rope control. Priced very low. Handi-Lift Electric Hoists are engineered and built by P&H, America's *largest* and *oldest* manufacturer of overhead materials handling equipment. Send for free bulletin H-23 today!

P&H HANDI-LIFT

General Offices: 4537 W. National Ave., Milwaukee 14, Wis.

HARNISCHFEGER CORPORATION
HOISTS • WELDING ELECTRODES • MOTORS • P&H • EXCAVATORS • ELECTRIC CRANES • ARC WELDERS

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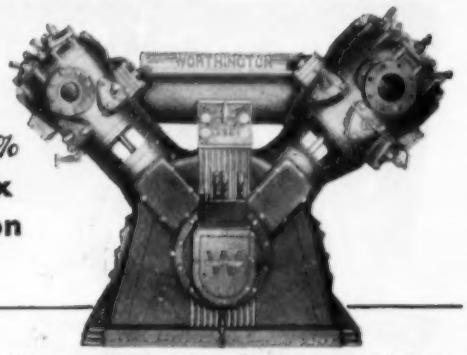
Put in a HUSKIE...*Faster!*

and SAVE 10% of Duplex Foundation Cost



This new Worthington YC "packaged" compressor is easier and costs less to install. No erecting engineer. No special foundation. Less floor space required—saves building costs. Lighter weight saves transportation and handling. Check *all* features of this 2-fisted Worthington "Y" design—variable capacity control, higher speeds, accessibility of parts, adaptability to many drives, Feather Valve* reliability. *Your Huskie can be running within a few days after delivery.* Write for free bulletin. *Worthington Pump and Machinery Corporation, Harrison, N. J.*

*Reg. U. S. Pat. Off.

No Other Compressor Will Outperform a Worthington Huskie

WORTH BEHIND THE NAME WORTHINGTON

AC 4-9

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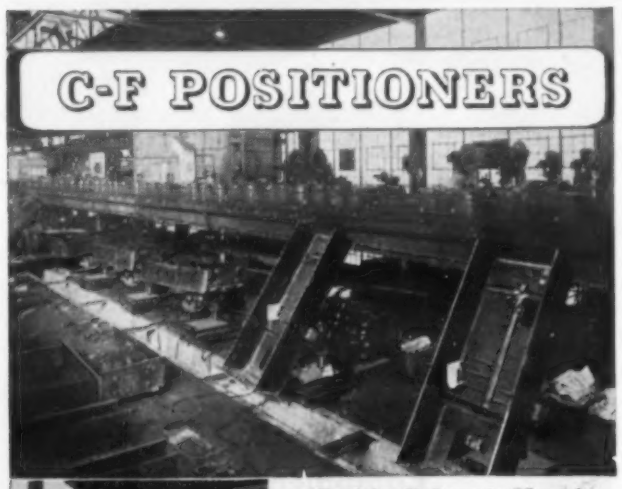

"Position" Counts Most in this heavy Welding Operation

Production welding usually means working on top, bottom and on all sides of the weldment. It means a "quick change" of position should be possible for greater time saving, more efficiency, lower costs and greater safety to men and materials. With C-F positioners a welder can quickly position even the most cumbersome weldments at the press of a button, without crane help or handling crews. With just one set-up of the weldment he can position it easily, speedily and safely, all alone. He can rotate it a full 360° at variable speeds from 0 R.P.M. up, tilt it to 135° beyond horizontal, and can weld, down-hand, all sides, surfaces and angles in the one set-up with larger rods and fewer passes. All C-F positioners, both stationary and portable, are pedestal mounted to give maximum floor and working clearance and all are adjustable for height.

Write for Bulletin WP-88

CULLEN-FRIESTEDT CO.
1304 S. KILBOURN AVE. CHICAGO 23, ILL.

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Weld-Bilt
Spring Bearing **Trucks**

"SHOCK-CUSHION" YOUR PRODUCT AGAINST DAMAGE!

You save time, labor, men, floors and product damage when you put WELD-BILT SPRING BEARING TRUCKS on every handling job. Unique SPRING BEARING axle *absorbs* all floor shocks and wheel vibrations—for easier, faster trucking, longer truck life.

WRITE FOR BULLETINS NOW—on Weld-Bilt SPRING BEARING Platform and Two-Wheel Trucks.

WEST BEND EQUIPMENT CORP.
220 WATER STREET, WEST BEND, WISCONSIN
MATERIALS HANDLING ENGINEERS
Hydraulic Lift Trucks, Two and Four-Wheel Trucks, Tiering Machines, Skid Platforms, Barrel Trucks and Racks, Portable Elevators and Special Equipment.

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ELECTRIC HEATING UNITS

Watlow better fitting units mean more efficient heat transfer . . . fewer burnouts.

Twenty years specializing in application of electric heat qualifies Watlow to help you with your heating problems.

Strips available for low or high temperature service in widths ¾" and over, lengths to 72" and more, capacities 25 to 4000 watts.

Send for Catalog
Illustrates and lists complete line of Watlow Electric Heating Units for all types of applications.
WATLOW ELECTRIC MANUFACTURING COMPANY
1314 North 23rd Street • Saint Louis 6, Missouri

WATLOW
SPECIALISTS IN ELECTRIC HEATING UNITS

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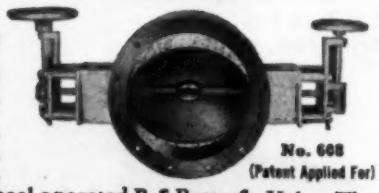
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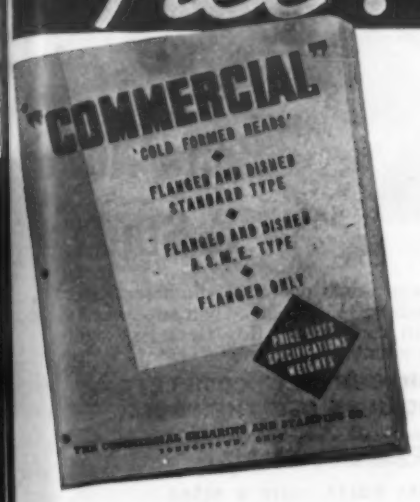

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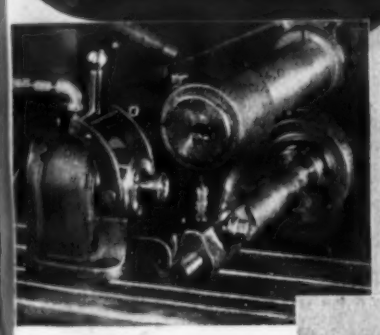

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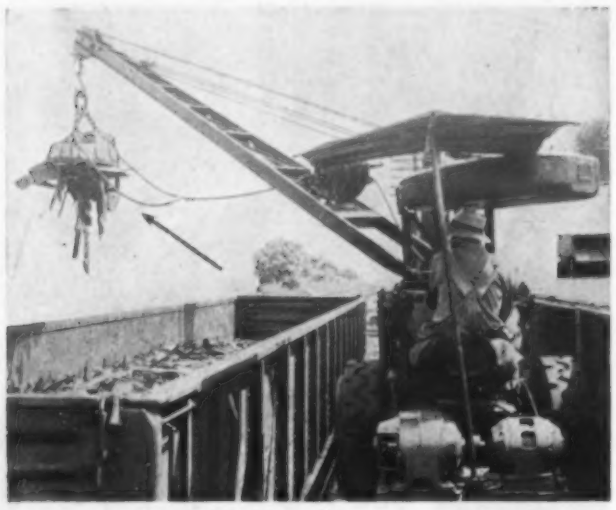

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New Literature—Continued

MACHINE TOOLS—54-page illustrated bulletin No. M-1322 contains engineering data on line of milling, broaching and cutter sharpening machines for tool engineers, plant layout men and methods engineers—issued by Cincinnati Milling & Grinding Machines, Inc., Cincinnati 9, O.

▲ Mention Item NED-6280 when writing ▲

TEMPERATURE REGULATORS—40-page illustrated catalog G.C. No. 1 introduces complete line of standard temperature and pressure control apparatus—includes history of company and general theory of Thermoswitches—issued by Fenwal, Inc., 70 Pleasant St., Ashland, Mass.

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CAR BOTTOM FURNACES—4-page illustrated bulletin No. HD-644 is descriptive of Hevi Duty car bottom furnaces—uses, construction features, design, specific requirements and heating elements are discussed—issued by Hevi Duty Electric Co., P. O. Box 563, Milwaukee, Wis.

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ROTARY SCRAPER STRAINERS—4-page illustrated leaflet covers various types of rotary scraper strainers—to standard Y type strainer, helical rotor scraper has been added and permits continuous operation—issued by Sarco Co., 475 Fifth Ave., New York 17, N. Y.

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ENGINE LATHE OPERATION—Handbook entitled "Operating an Engine Lathe" by Ray S. Lindenmeyer of Northwestern Technological Institute is compilation of series of articles that appeared in SCIENCE AND MECHANICS—book is intended for firms training lathe operators—price is 50 cents—issued by SCIENCE AND MECHANICS, 154 E. Erie St., Chicago 11, Ill.

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CASTING OF PLASTIC—Booklet, "Tenite II Casting", discusses casting of thermoplastic material for forming tools—tells how plastic forming tools are preferred to metal ones in many cases because of relatively low cost, time-savings and lighter weight—issued by Tennessee Eastman Corp., Kingsport, Tenn.

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